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BEFORE THE ARIZONA CORPORATION COMMISSION

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**COMMISSIONERS**

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SUSAN BITTER SMITH

IN THE MATTER OF THE APPLICATION OF )  
TUCSON ELECTRIC POWER COMPANY FOR )  
APPROVAL OF ITS 2014 ENERGY EFFICIENCY )  
IMPLEMENTATION PLAN AND FOR WAIVER )  
UNDER A.A.C. 414-2-2419. )

DOCKET NO. E-01933A-13-0183

Tucson Electric Power Company ("TEP") or "Company"), through undersigned counsel, hereby submits its 2014 Energy Efficiency Implementation Plan for Arizona Corporation Commission ("Commission") approval, in compliance with Arizona Administrative Code R14-2-2401, *et seq.* TEP also requests a waiver under A.A.C. R14-2-2419 of the Energy Efficiency Standard set forth in A.A.C. R14-2-2404.B.

TEP hereby requests that the Commission approve TEP's 2014 Energy Efficiency Implementation Plan prior to December 31, 2013 and grant the requested waiver of the Energy Efficiency Standard.

RESPECTFULLY SUBMITTED this 3<sup>rd</sup> day of June 2013.

Tucson Electric Power Company

By

Michael W. Patten  
One Arizona Center  
400 East Van Buren Street, Suite 800  
Phoenix, Arizona 85004

Arizona Corporation Commission

**DOCKETED**

and

JUN - 3 2013

DOCKETED BY

ne

Bradley S. Carroll  
Kimberly A. Ruht  
Tucson Electric Power Company  
88 East Broadway Blvd., MS HQE910  
P. O. Box 711  
Tucson, Arizona 85702

Attorneys for Tucson Electric Power Company

Original and 13 copies of the foregoing  
filed this 3<sup>rd</sup> day of June 2013 with:

Docket Control  
Arizona Corporation Commission  
1200 West Washington Street  
Phoenix, Arizona 85007

Copy of the foregoing hand-delivered/mailed  
this 3<sup>rd</sup> day of June 2013 to:

Lyn A. Farmer  
Chief Administrative Law Judge  
Hearing Division  
Arizona Corporation Commission  
1200 West Washington  
Phoenix, Arizona 85007

Janice M. Alward  
Chief Counsel, Legal Division  
Arizona Corporation Commission  
1200 West Washington  
Phoenix, Arizona 85007

Steve Olea  
Director, Utilities Division  
Arizona Corporation Commission  
1200 West Washington Street  
Phoenix, Arizona 85007

By 

**TUCSON ELECTRIC POWER CO.  
2014 ENERGY EFFICIENCY  
IMPLEMENTATION PLAN**

**JUNE 1, 2013**

## Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan

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## Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan

### I. 2014 Implementation Plan Executive Summary

Tucson Electric Power Company ("TEP" or the "Company") hereby submits its 2014 Energy Efficiency Implementation Plan ("EE Plan") for Arizona Corporation Commission ("Commission") approval, in compliance with Arizona Administrative Code ("A.A.C") R14-2-2405.

The EE Plan includes a short description of existing Commission-approved Energy Efficiency ("EE") programs, pending EE programs<sup>1</sup>, proposed new EE programs and measures, the estimated total cost and cost per kWh (\$/kWh) lifetime reduction for each program, an estimate of the annual kilowatt hour ("kWh") and kilowatt ("kW") savings projected for each program, societal test results for each measure and each program, and details on how each program contributes to the Company's 2014 EE savings goal.

As a result of the current status of the Company's 2011-2012 EE Plan, as well as other economic factors described herein, TEP may not meet the cumulative Energy Efficiency Standard ("EE Standard") set forth in A.A.C. R14-2-2404(B) for 2014. Accordingly, the Company requests a waiver from the 2014 EE Standard in accordance with A.A.C. R14-2-2419(B). The waiver request notwithstanding, TEP will continue to strive to maximize the cost-effective savings achieved for the dollars spent. Table 1.1 illustrates compliance with the EE Standard for the years 2011-2014, with 2013 and 2014 being forecasted based upon projected participation.

**Table 1.1 TEP Compliance with EE Standard for Years 2011-2014**

Year	Retail Energy Sales (MWh)	Incremental Annual Energy Savings (MWh)	Cumulative Annual Energy Savings (MWh)	Cumulative Annual Savings as a % of previous year Retail Sales	Cumulative EE Standard
2010 <sup>1</sup>	9,291,788				
2011 <sup>1</sup>	9,332,107	139,539	139,539	1.50%	1.25%
2012 <sup>1</sup>	9,264,818	105,655	245,194	2.63%	3.00%
2013 <sup>2</sup>	9,210,649	117,548	362,742	3.92%	5.00%
2014 <sup>2</sup>	9,283,254	174,036	536,778	5.83%	7.25%

1. Actual sales and savings values

2. Forecasted sales and estimated savings values

Programs and measures within the EE Plan labeled as 'Pending' are anticipated to be approved in TEP's 2012 Rate Case Order, and therefore this EE Plan considers them as existing programs or measures. If these programs or measures are not approved in TEP's 2012 Rate Case Order, each of the programs or measures labeled as 'Pending' should then be considered by the Commission as a 'New' program or measure. Pending program descriptions can be found in TEP's 2011-2012 EE Implementation Plan ("2011-2012 EE Plan") filed January 31, 2011 in Docket No. E-01933A-11-0055.

#### Summary of Requests:

TEP's EE Plan requests the following:

1. Commission approval of the 2014 EE Plan Budget - approximately \$19 million shown in Table 1.2 and approval of the programs and measures described herein.

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<sup>1</sup> Pending EE programs and measures are from the Company's 2011-2012 EE Plan, which is currently pending in Docket No. E-01933A-11-0055.

## Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan

**Table 1.2 Summary of Portfolio Costs and Saving**

Program Year	Total Program Budget	Annual Energy Savings (MWh)	Lifetime Energy Savings (MWh)	Peak Demand Savings (MW)	\$/kWh (Lifetime)	Portfolio Societal Test Ratio
2014	\$19,084,859	173,978	1,124,821	40.55	\$0.017	2.9

2. Commission approval of a new Conservation Voltage Reduction program to enhance the portfolio of Demand-Side Management (“DSM”)/EE programs, thus also requiring a waiver from A.A.C. R14-2-2404(H), which states: “An affected utility’s energy savings resulting from efficiency improvements to its delivery system may not be counted toward meeting the standard.”
3. Commission approval of a new Generation Improvement and Facilities Upgrade program to enhance the portfolio of DSM/EE programs.
4. A waiver from A.A.C. R14-2-2404(E) to allow TEP to count energy savings resulting from EE appliance standards, as was approved for UNS Electric (Decision No. 72747, January 20, 2012) and Arizona Public Service (“APS”) (Decision No. 73089, April 5, 2012).
5. A waiver from A.A.C. R14-2-2404(E) to allow TEP to count toward meeting the EE Standard 100% of the energy savings resulting from updates in EE building codes and EE appliance standards.
6. Commission approval of new measures shown in Table 3.2.
7. Commission approval for program modifications as summarized in Table 3.1. Additional detail is provided in Section IV-Residential Program, and Section V-Commercial and Industrial Programs.
8. Commission approval to offer all commercial measures to all customers participating in any commercial program. Additional detail is provided in Section V-Commercial and Industrial Programs.
9. Commission approval of 2014 performance metrics for cost recovery in accordance with an outline in Exhibit 1, should TEP’s Energy Efficiency Resource Plan (“EERP”) be approved in TEP’s pending 2012 Rate Case (Docket No. E01933A-12-0291).
10. Commission approval of this EE Plan on or before December 31, 2013. TEP believes this 2014 EE Plan is prudent, is necessary to the successful implementation of the EE Standard, and is in the public interest.

## **II. Introduction**

TEP has a comprehensive portfolio of programs to deliver electric energy and demand savings. These programs include: i) incentives, direct-install, and buy-down approaches for EE products and services; ii) educational and marketing approaches to raise awareness and modify behaviors; and iii) partnerships with trade allies to apply as much leverage as possible to augment the rate-payer dollars invested. As a result of the timing and delay in approval of the Company's 2011-2012 EE Plan, as well as other economic factors, TEP did not meet the annual or cumulative Energy Efficiency Standard ("EE Standard") set forth in A.A.C. R14-2-2404(B) for 2012 or 2013. With approval to proceed with all existing measures and programs in addition to the new measures and programs included in the 2014 Implementation Plan, TEP will begin to close the deficiency gap and make progress towards meeting the 2020 energy savings goal. TEP does anticipate meeting the 2020 EE savings goal unless interruptions occur that are beyond TEP's control.

### **A. Implementation Plan, Goals, and Objectives**

TEP's high-level efficiency-related goals and objectives for 2014:

- Implement cost-effective EE programs using Commission Staff methodology for determining cost effectiveness;
- Implement a diverse group of programs that provide opportunities for all customers to participate;
- Achieve a cumulative energy savings equal to 5.83% of 2013 retail sales (see Table 1.1);
- Maximize comprehensive cost-effective savings opportunities;
- Utilize [www.tep.com](http://www.tep.com) to provide TEP customers and contractors with detailed information on the electricity savings opportunities available through the Company's EE programs;
- Promote adoption of increased EE building codes and appliance standards;
- Expand the EE infrastructure in the state by increasing the number of qualified contractors through training and certification in specific fields;
- Use trained and qualified trade allies, such as electricians, HVAC contractors, builders, architects and engineers, to help expand the market for efficient technologies; and
- Create a more informed and educated customer base on how to modify behaviors to use energy more efficiently.

### **B. Planning Process**

TEP's portfolio of programs focuses integrating elements of some of the nation's most successful EE programs into TEP's specifically designed program portfolio to meet the customer's needs. Evaluations, program plans, and EE potential studies were used to develop these programs for TEP. The Company also used a benchmarking process to review the most successful EE programs from across the country, with a focus on successful Southwestern programs to help develop the program portfolio.

### **C. Portfolio Risk Management**

As of May 2013, the Arizona economy is continuing to recover from a severe economic recession. Even though there are modest signs of recovery, the economy will likely continue to present a challenge to participation levels in the near future. TEP recognizes this dilemma and has developed a portfolio of programs to allow for participation at diverse levels. By proposing a multi-faceted and broad portfolio of programs, TEP is attempting to capitalize on the sectors of the market who want to invest in EE, at a cost

## **Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan**

point they can afford. This will allow the Company to attempt to meet the Commission's aggressive annual EE Standard.

TEP used the following strategies to minimize perceived risks and produce the lowest cost portfolio of EE programs:

- Implement "tried and true" cost-effective programs that have been successfully applied by other utilities in the Southwest and across the country; and
- Implement cost-effective programs through a combination of third-party Implementation Contractors ("IC") and utility staff. TEP designs programs on the most cost-effective basis.

### **III. Program Portfolio Overview**

Within the EE Plan, programs and measures labeled as ‘Pending’ are anticipated to be approved in TEP’s 2012 Rate Case Order, and therefore this EE Plan considers them as existing programs or measures. If these programs or measures are not approved in TEP’s 2012 Rate Case Order, each of the programs or measures labeled as ‘Pending’ should then be considered by the Commission as a ‘New’ program or measure. Pending program descriptions can be found in the 2011-2012 EE Plan. Details necessary to confirm the societal test for existing, pending and new measures is provided in Exhibit 2.

The following table provides an overview of the existing, pending and new programs for residential, commercial and industrial (“C&I”), behavioral, and support sectors, as well as notes indicating modifications requested for the 2014 EE Plan. Administrative functions provide support across all program areas. Information on pending and existing program design and proposed new programs or measures is located in Section IV through Section IX.

**Table 3.1. TEP Electric Portfolio of Programs with Requested Modification**

<b>Program Name</b>	<b>Program Status</b>	<b>Description</b>	<b>Modifications</b>
<b>Residential Sector</b>			
Efficient Products	Existing and Pending	Promotes customer purchases of CFLs, advanced power strips, and EE pool pumps and timers	Request approval to add new measures
Appliance Recycling	Pending	Removes and recycles inefficient refrigerators and freezers	Notification that incentive is increasing to increase program participation
Residential New Construction	Existing	Promotes the building of more energy efficient new homes	Notification that baseline EE construction standards and incremental costs are updated to account for adoption of 2012 IECC
Existing Homes and Audit Direct Install	Existing	Promotes EE in existing homes	Request approval to add new measures
Shade Tree	Existing	Promotes planting of desert-adapted shade trees in locations designed to enhance EE	Notification that savings and incremental cost have been updated with new analysis
Low-Income Weatherization	Existing	Assists in making low-income homes more energy efficient	No modifications
Multi-Family	Pending	Promotes direct install of EE measures at apartment complexes consisting of five or more dwelling units	No modifications
<b>Commercial Sector</b>			
C&I Comprehensive	Existing	Promotes installation of EE equipment at business customer’s facilities and encourages contractors to promote the program	Request approval to add new measures
Small Business Direct Install	Existing	Promotes installation of EE equipment at business customer’s facilities by reducing customer’s out-of-pocket costs and encourages contractors to promote the program by paying contractors the incentive	Request approval to add new measures
Commercial New Construction	Existing	Promotes the installation of EE equipment during the design and construction of any new facility and offers an incentive to assist with additional design assistance that may be necessary	No modifications

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Bid for Efficiency	Pending	Customers of project sponsors develop a holistic EE project then bid competitively for incentives within program guidelines	No modifications
Retro-Commissioning	Pending	Promotes existing facilities to use a systematic approach to identify building equipment or processes that are not achieving optimal performance or results	No modifications
Schools Facilities	Pending	Similar to the Small Business Direct Install program, but with a separate budget specifically for school facilities	Request approval to add new measures
Combined Heat and Power	Pending	Promotes existing facilities to use a gas-fired combined heat and power plant to reduce electric consumption	No modifications
<b>Behavioral Sector</b>			
Home Energy Reports	Existing	Energy reports comparing a customer's energy usage to that of their neighbors with similar sized homes using comparable heating and cooling equipment	No modifications
Behavioral Comprehensive	Pending	A variety of educational and behavioral programs, including K-12 student education, direct canvassing, community education, senior education, and CFL giveaways	No modifications
<b>Support Sector</b>			
Consumer Education and Outreach	Existing	Consumer education designed to increase participation in the TEP EE programs and promote changes in behavior to increase EE	No modifications
Residential Energy Financing	Pending	Low interest unsecured loans to help customers install EE measures in existing homes	No modifications
Energy Codes and Standards Enhancement Program ("ECSEP")	Existing	Seeks to improve the level of compliance with existing local building energy codes and appliance standards and supports the periodic updating of these codes and standards	Request approval to allow TEP to also count savings resulting from changes in appliance standards toward meeting the EE Standard, and to count 100% (rather than 33%) of the energy savings resulting from changes in EE building codes and appliance standards
Program Development, Analysis and Reporting Software	Existing	New measure or program design and analysis, and development and maintenance of EE savings tracking software	No modifications
<b>Utility Improvements Sector</b>			
Conservation Voltage Reduction	New	Seeks to reduce energy consumption in distribution systems by maximizing the VAR with computerized control	New pilot program
Generation Improvement and Facilities Upgrade	New	Seeks to reduce energy consumption in power plants and utility facilities by installing EE pumps, motors, HVAC, lighting and improvements to increase heat rate in generation	New program
<b>Demand Response Sector</b>			
C&I Demand Response	Existing	A third party implementation contractor negotiates load reduction agreements with multiple customers and aggregates those customers to provide TEP with a guaranteed load reduction upon request	No modifications

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Residential and Small Commercial Demand Response	Existing	A third party implementation contractor negotiates agreements with residential customers to install switching or special thermostats to provide TEP with a guaranteed load reduction upon request	Notification that this program will be removed from TEP's portfolio.
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## Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan

The following table provides an overview of the new measures TEP is requesting approval. New measures are intended to enhance existing or pending EE programs. Details are provided in Section IV-Residential Programs and Section V-Commercial and Industrial Programs.

**Table 3.2 New Measure Detail**

Program	Program Measure	Base Efficiency	High Efficiency	Avg. Incentive per Unit	Estimated Participation	Societal Test
<b>Residential Sector</b>						
Efficient Products	Residential LED Lights	46 Watt Incandescent	12 Watt LED	\$6.32	3,500	2.06
Efficient Products	Residential 2x Incandescent	79 Watt	50 Watt	\$0.66	2,000	1.70
Efficient Products	Central AC / Heat Pump	13 SEER	ENERGY STAR®	\$300.00	150	3.57
Efficient Products	Ceiling Fan	Conventional	Energy Star® Ceiling Fan	\$30.00	100	1.74
Efficient Products	Freezer	Conventional	Energy Star®	\$10.00	25	2.69
Efficient Products	Clothes Washer	Conventional	Energy Star®	\$100.00	200	1.24
Efficient Products	Dishwasher	Conventional	Energy Star®	\$10.00	150	3.82
Efficient Products	Refrigerator	Conventional	Energy Star®	\$20.00	100	2.08
Efficient Products	Room Air Conditioner	Conventional	Energy Star®	\$35.00	75	1.94
Efficient Products	Heat Pump Water Heater	0.90 Efficiency	2.35 COP	\$400.00	20	1.17
Efficient Products	Water Heater Blanket	No Blanket	R-10 Blanket	\$22.00	50	3.33
Existing Homes	HVAC/QI	No QI	With QI	\$250	1,000	1.49
<b>Commercial Sector</b>						
C&I Comprehensive, Small Business and Schools Facilities	Canopy LED	458 Watt	108 Watt	\$100.00	300	1.89
C&I Comprehensive, Small Business and Schools Facilities	LED Indoor Lights	56 Watt Incandescent	7 Watt LED	\$20.00	300	1.54
C&I Comprehensive, Small Business and Schools Facilities	Refrigeration LED Strip Lighting	32 Watt-T-8	20 Watt LED	\$27.50	50	1.35
C&I Comprehensive, Small Business and Schools Facilities	Computer Power Monitoring System	No power monitor	Computer power monitor	\$8.00	2,000	2.73
C&I Comprehensive, Small Business and Schools Facilities	Pulse Start Metal Halide - Interior	Pulse Start MH Lamp	Conventional MH Lamp	\$100.00	75	1.45
C&I Comprehensive, Small Business and Schools Facilities	Pulse Start Metal Halide - Exterior	Pulse Start MH Lamp	Conventional MH Lamp	\$90.00	75	1.56
C&I Comprehensive, Small Business and Schools Facilities	EMS - HVAC and Cold Deck Reset	No EMS	With EMS	\$0.31	250	1.68
C&I Comprehensive, Small Business and Schools Facilities	Variable Refrigerant Flow Systems	Standard Refrigerant Flow	Variable Refrigerant Flow	\$2.00	250	3.07
C&I Comprehensive, Small Business and Schools Facilities	Hotel Room HVAC Control	Standard-no sensor	Sensor Control	\$50.00	50	2.26
C&I Comprehensive, Small Business and Schools Facilities	HVAC System test and repair	No test and repair	With test and repair	\$360.00	25	2.31
C&I Comprehensive, Small Business and Schools Facilities	Evaporative Fan Control	Shaded pole motor with no control	EC motor with control	\$75.00	10	1.59

## Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan

Using Commission Staff's methodology for calculating the Societal Test, and including updated avoided costs, TEP has determined certain measures to no longer be cost effective. TEP proposes to suspend these measures until they become cost-effective again. A summary of the measures that TEP will suspend in 2014 are included in Table 3.3 below. Details are provided in Section IV-Residential Programs and Section V-Commercial and Industrial Programs.

**Table 3.3 Suspended Measure Detail**

Program	Program Measure	Base Efficiency	High Efficiency	Avg. Incentive per Unit	Estimated Participation	Societal Test
<b>Residential Sector</b>						
Existing Homes and Audit Direct Install	ROB HVAC with QI and Duct Sealing –Electric (Performance)	SEER 13	Energy Star	\$1,050	0	0.94
Existing Homes and Audit Direct Install	ROB HVAC with QI and Duct Sealing –Dual Fuel (Performance)	SEER 13	Energy Star	\$1,050	0	0.94
Existing Homes and Audit Direct Install	Behavioral changes resulting from Energy Assessments	No action	Behavioral Changes	\$350	0	0.35
Residential New Construction	ENERGY Smart Homes - Tier 3	Standard home	HERS <= 45	\$3,000	0	0.22
<b>Commercial Sector</b>						
C&I Comprehensive Program	LED Street and Parking Lights	250 Watt Metal Halide	33 Watt LED	\$75	0	0.58
C&I Comprehensive Program, Small Business	Night Covers	No covers	Covers	\$10	0	0.80
C&I Comprehensive Program, Small Business and Schools Programs	Standard T-8 to Premium T-8	Standard T-8	Premium T-8	\$6	0	0.40

## Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan

### A. 2014 Savings, Budgets, Benefit-Cost Results

This EE Plan presents a continuing portfolio of investments consistent with the requirements of the EE Standard. TEP will continue to monitor projected program funding and participation. The Company may make changes in program level funding as needed. Additionally, incentive levels and other program elements will be reviewed and modified on an annual basis to reflect changes in market conditions and/or implementation processes, so that cost-effective savings can be maximized. Such modifications will be reported in the annual reports submitted to the Commission. Table 3.4 provides cost and savings details per program for 2014. Table 3.5 shows the program budgets by expense category.

**Table 3.4 2014 Costs and Savings by Program**

Program Name	Annual Energy Savings at Generator (MWh)	Coincident Demand Savings at Generator (MW)	Total Program Budget	Program Cost per Lifetime kWh Saved (\$/kWh)	Program Cost per First Year kWh Saved (\$/kWh)
<b>Residential Sector</b>					
Efficient Products	52,146	2.74	\$2,347,872	\$0.01	\$0.05
Appliance Recycling	3,980	0.62	\$608,762	\$0.03	\$0.15
Residential New Construction	1,682	1.34	\$1,429,910	\$0.03	\$0.85
Existing Homes and Audit Direct Install	2,593	2.41	\$2,421,120	\$0.06	\$0.93
Shade Trees	264	0.13	\$178,087	\$0.02	\$0.67
Low Income Weatherization	388	0.13	\$303,637	\$0.04	\$0.78
Multi-Family	422	0.13	\$127,801	\$0.04	\$0.30
<b>Sub-Total</b>	<b>61,474</b>	<b>7.28</b>	<b>\$7,417,189</b>	<b>\$0.01</b>	<b>\$0.12</b>
<b>Commercial Sector</b>					
C&I Comprehensive	25,363	6.83	\$3,557,922	\$0.01	\$0.14
Small Business Direct Install	7,340	0.68	\$1,515,900	\$0.02	\$0.21
Commercial New Construction	1,047	0.58	\$280,177	\$0.02	\$0.27
Bid-For Efficiency - Pilot	876	0.49	\$186,928	\$0.02	\$0.21
Retro-Commissioning	876	0.49	\$146,461	\$0.02	\$0.17
Schools Facilities	3,986	0.30	\$894,146	\$0.02	\$0.22
CHP Joint Program - Pilot	0	0.00	\$2,588	\$0.00	\$0.00
<b>Sub-Total</b>	<b>39,489</b>	<b>9.37</b>	<b>\$6,584,123</b>	<b>\$0.01</b>	<b>\$0.17</b>
<b>Behavioral Sector</b>					
Home Energy Reports	9,855	1.82	\$344,535	\$0.03	\$0.03
Behavioral Comprehensive	4,456	0.24	\$790,457	\$0.03	\$0.18
<b>Sub-Total</b>	<b>14,311</b>	<b>2.06</b>	<b>\$1,134,992</b>	<b>\$0.03</b>	<b>\$0.08</b>
<b>Support Sector</b>					
Consumer Education and Outreach	0	0	\$616,720	NA	NA
Residential Energy Financing	0	0	\$243,864	NA	NA
ECSEP	35,728	1.50	\$324,707	\$0.01	\$0.01
Program Development, Analysis and Reporting	0	0	\$775,000	NA	NA
<b>Sub-Total</b>	<b>35,728</b>	<b>1.50</b>	<b>\$1,960,292</b>	<b>NA</b>	<b>NA</b>
<b>Utility Improvement Sector</b>					
Conservation Voltage Reduction	2,522	0.34	\$409,396	\$0.01	\$0.16
Generation Improvement and Facilities Upgrade	0	0.00	\$28,704	\$0.00	\$0.00
<b>Sub-Total</b>	<b>2,522</b>	<b>0.34</b>	<b>438,100</b>	<b>\$0.01</b>	<b>\$0.16</b>
<b>Demand Response Sector</b>					
C&I Direct Load Control	20,453	20.00	\$1,559,444	\$0.08	\$0.08
<b>Sub-Total</b>	<b>20,453</b>	<b>20.00</b>	<b>\$1,559,444</b>	<b>N/A</b>	<b>N/A</b>
<b>Total</b>	<b>173,978</b>	<b>40.55</b>	<b>\$19,084,859</b>	<b>\$0.017</b>	<b>\$0.11</b>

**Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan**

**Table 3.5 2014 Program Budgets by Category**

<b>Program Name</b>	<b>Incentives</b>	<b>Program Delivery</b>	<b>Program Marketing</b>	<b>Utility Program Administration</b>	<b>Measurement and Evaluation</b>	<b>Total Program Budget</b>
<b>Residential Sector</b>						
Efficient Products	\$1,505,270	\$543,155	\$143,390	\$90,303	\$65,754	\$2,347,872
Appliance Recycling	\$90,000	\$319,409	\$143,293	\$26,215	\$29,846	\$608,762
Residential New Construction	\$1,050,000	\$190,707	\$75,000	\$61,575	\$52,628	\$1,429,910
Existing Homes and Audit Direct Install	\$1,692,000	\$589,695	\$68,451	\$23,971	\$47,003	\$2,421,120
Shade Trees	\$150,500	\$13,454	\$4,919	\$6,849	\$2,364	\$178,087
Low Income Weatherization	\$232,800	\$27,042	\$15,591	\$11,678	\$16,526	\$303,637
Multi-Family	\$20,767	\$91,816	\$7,881	\$3,722	\$3,614	\$127,801
<b>Sub-Total</b>	<b>\$4,741,337</b>	<b>\$1,775,278</b>	<b>\$458,524</b>	<b>\$224,314</b>	<b>\$217,736</b>	<b>\$7,417,189</b>
<b>Commercial Sector</b>						
C&I Comprehensive	\$1,856,108	\$1,094,517	\$295,062	\$169,425	\$142,810	\$3,557,922
Small Business Direct Install	\$837,934	\$479,084	\$65,851	\$72,186	\$60,846	\$1,515,900
Commercial New Construction	\$114,484	\$113,207	\$22,769	\$10,419	\$10,018	\$270,897
Bid-For Efficiency - Pilot	\$60,000	\$95,022	\$15,502	\$8,901	\$7,503	\$186,928
Retro-Commissioning	\$88,000	\$40,470	\$6,423	\$5,633	\$5,935	\$146,461
Schools Facilities	\$491,432	\$292,874	\$39,215	\$34,390	\$36,235	\$894,146
CHP Joint Program - Pilot	\$0	\$2,500	\$0	\$88	\$0	\$2,588
<b>Sub-Total</b>	<b>\$3,447,958</b>	<b>\$2,117,672</b>	<b>\$444,823</b>	<b>\$301,042</b>	<b>\$263,348</b>	<b>\$6,574,843</b>
<b>Behavioral Sector</b>						
Home Energy Reports	\$0	\$323,188	\$0	\$11,651	\$9,696	\$344,535
Behavioral Comprehensive	\$235,800	\$417,222	\$75,000	\$30,042	\$32,033	\$790,457
<b>Sub-Total</b>	<b>\$235,800</b>	<b>\$740,410</b>	<b>\$75,000</b>	<b>\$42,053</b>	<b>\$41,729</b>	<b>\$1,134,992</b>
<b>Support Sector</b>						
Consumer Education and Outreach	\$0	\$108,000	\$485,000	\$23,720	\$0	\$616,720
Residential Energy Financing	\$100,000	\$49,485	\$75,000	\$9,379	\$10,000	\$243,864
ECSEP	\$0	\$259,318	\$0	\$12,489	\$52,901	\$324,707
Program Development, Analysis and Reporting	\$0	\$775,000	\$0	\$0	\$0	\$775,000
<b>Sub-Total</b>	<b>\$100,000</b>	<b>\$1,191,803</b>	<b>\$560,000</b>	<b>\$45,588</b>	<b>\$62,901</b>	<b>\$1,960,292</b>
<b>Utility Improvement Sector</b>						
Conservation Voltage Reduction	\$0	\$373,482	\$0	\$15,746	\$20,168	\$409,396
Generation Improvement and Facilities Upgrade	\$0	\$25,000	\$0	\$1,104	\$2,600	\$28,704
<b>Sub-Total</b>	<b>\$0</b>	<b>\$398,482</b>	<b>\$0</b>	<b>\$16,850</b>	<b>\$22,768</b>	<b>\$438,100</b>
<b>Demand Response Sector</b>						
C&I Direct Load Control	\$0	\$1,459,466	\$0	\$59,979	\$40,000	\$1,559,444
<b>Sub-Total</b>	<b>\$0</b>	<b>\$1,459,466</b>	<b>\$0</b>	<b>\$59,979</b>	<b>\$40,000</b>	<b>\$1,559,444</b>
<b>Total</b>	<b>\$8,525,095</b>	<b>\$7,683,110</b>	<b>\$1,538,347</b>	<b>\$689,826</b>	<b>\$648,841</b>	<b>\$19,084,859</b>

#### IV. Residential Programs

The following section presents a summary of TEP's residential programs including existing, pending, and new programs and measures, as well as enhancements to existing programs consistent with the requirements of A.A.C. R-14-2-2407.

##### A. Efficient Products

*TEP is requesting budget approval and approval to offer new measures in 2014.*

###### Program Description

The Efficient Products program was approved by the Commission in Decision No. 70383 (June 13, 2010). The Efficient Products program (formerly called CFL Buy-Down program) was re-named to recognize that it will serve as the delivery channel to address other efficient products beyond compact fluorescent lights ("CFLs"), and therefore will also promote the purchase of additional EE retail products. This program was expanded to include promotion of EE pool pumps, pool timers, residential LED lighting, and advanced power strips, which, with the exception of residential LED lighting, are pending from the 2011-2012 EE Plan and anticipated to be approved by the Commission in the 2012 Rate Case Order. TEP has conducted a new incremental cost study for residential LED lighting which shows the measure to now be cost effective and requests reconsideration for approval.

###### Program Objectives and Rationale

The new measures will offer residential customers additional opportunities to reduce their energy consumption. These measures will also further the transformation of the market through retail partnerships, training of retail staff, and increased stocking and selection for efficient retail products.

###### Eligibility

The program is available to all residential utility customers within the TEP service territory.

## Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan

### New Measures for 2014

Table 4.1 presents new measures and their incentives for 2014.

**Table 4.1 Measure Efficiencies, Incentive Level, Participation, and Benefit-Cost<sup>2</sup>**

Program Measure	Base Efficiency	High Efficiency	Avg. Incentive per Unit	Estimated Participation	Societal Test
Residential LED Lights	46 Watt Incandescent	12 Watt LED	\$6.32	3,500	2.06
Residential 2x Incandescent	79 Watt	50 Watt	\$0.66	2,000	1.70
ENERGY STAR® Central AC / Heat Pump	13 SEER	Energy Star	\$300.00	150	3.57
ENERGY STAR Ceiling Fan	Conventional	Energy Star	\$30.00	100	1.74
ENERGY STAR Freezer	Conventional	Energy Star	\$10.00	25	2.69
ENERGY STAR Clothes Washer	Conventional	Energy Star	\$100.00	200	1.24
ENERGY STAR Dishwasher	Conventional	Energy Star	\$10.00	150	3.82
ENERGY STAR Refrigerator	Conventional	Energy Star	\$20.00	100	2.08
ENERGY STAR Room Air Conditioner	Conventional	Energy Star	\$35.00	75	1.94
Heat Pump Water Heater - Residential	0.90 Eff.	2.35 COP	\$400.00	20	1.17
Water Heater Blanket	No Blanket	R-10 Blanket	\$22.00	50	3.33

### Delivery and Marketing Strategy

TEP is proposing no significant changes in implementation or delivery strategy except the changes required to address the addition of the new measures. Delivery channels for the new and pending measures will continue to be a combination of buy-downs and possible on-line or mail-in rebates with participating retailers. Advances in online rebate technology have lowered processing costs and extended rebate availability for previously hard to reach areas and consumers.

The program is primarily marketed through mass-market channels (e.g., radio, newspaper, website, etc.) or through education and training of participating retailers.

### Cost-Effectiveness

All measures in this program were found to be cost-effective using the Societal Test in TEP's 2014 EE Plan analysis. It is anticipated that the Commission will determine the program to be cost-effective in the 2012 Rate Case Order. Additional detail on lifetime energy savings, societal benefits/costs, non-incentive cost per measure for all measures is included in Exhibit 2, Section 1.

<sup>2</sup> Additional detail on lifetime energy savings, societal benefits/costs, non-incentive cost per measure and environmental benefits of new measures is included in Exhibit 2.

## **Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan**

### Measurement, Evaluation, and Research Plan

The Measure, Evaluation, and Research (“MER”) plan is consistent with the previously filed strategy and will include the following:

- Program Management
  - In addition to the manufacturer buy-down measures this program will employ mail-in or on-line rebates. Each retailer will collect the data necessary for the rebate processor to verify purchase and eligibility. Copies of invoices or receipts along with other customer data will be collected and maintained by the rebate processor.
  - The IC will validate customer information where necessary and check against manufacturer sales prior to payment of incentive to retailer.
- Annual 3<sup>rd</sup> party review
  - MER contractor will verify IC data against manufacturer records.
  - MER contractor will verify IC data against TEP data.
  - MER contractor will conduct field verification of measures on a rotating basis (3-year cycle) where applicable.
- Annual 3<sup>rd</sup> party impact evaluation on the program will be completed by the MER contractor to evaluate actual energy savings. Impact evaluation is completed using some or all of the following analysis techniques:
  - Desk review;
  - Customer/contractor questionnaires; and
  - On-site inspections
- Cost research is completed by the MER contractor on various measures within the program to maintain up-to-date information on incremental measure costs.
- Research as necessary on various measures within the program is completed by the MER contractor to evaluate changes in baseline conditions due to new codes and standards.
- In addition to annual impact evaluation, the MER contractor will periodically conduct a process evaluation on the portfolio of EE programs. They will also incorporate review of new measures and review of delivery tactics. The additional process evaluation may include customer satisfaction surveys and suggestions for process improvements.

### Other Information

Baseline assumptions for CFLs used for calculating energy savings were updated in 2013 to account for changes from the Energy Independence and Security Act (“EISA”). CFL energy savings were reduced based on EISA, and these reductions have been incorporated into the saving and cost-effective calculations in the 2014 Efficient Products program.

## **B. Appliance Recycling**

***TEP is requesting budget approval to continue this program with one modification.***

### Program Description

The Appliance Recycling program is a pending program from the 2011-2012 EE Implementation Plan. The program is anticipated to receive approval in the 2012 Rate Case Order to launch in August of 2013. The program targets the removal and recycling of operable, but redundant, refrigerators and freezers. An appliance recycling contractor provides turnkey implementation services that include verification of customer eligibility, scheduling of pick-up appointments, appliance pick-up, incentive fulfillment, and recycling services.

## **Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan**

### **Program Objectives and Rationale**

The objective of the program is to produce long-term electric energy savings in the residential sector by permanently removing operable, but redundant, refrigerators and freezers from the power grid and recycling them in an environmentally safe manner. In order to boost participation, TEP is requesting approval to increase the incentive offered to customers from \$30 to \$50, which is consistent with other utilities in Arizona.

### **Program Eligibility**

The program is available to all residential utility customers with operable inefficient refrigerators or freezers that are between 10 and 30 cubic feet. The program, may also apply to small commercial customers, if the size requirements for refrigerators and freezers are between 10 and 30 cubic feet. The program will limit the rebate to two units per year per customer.

### **Current Baseline Conditions**

National studies have found that approximately 20% of customers have at least one secondary inefficient refrigerator or freezer in their home. Most of these units are ten years old or more.

### **Products and Services**

The products and services provided by the program include:

- Free pick-up and recycling of operable inefficient refrigerators or freezers;
- A \$50 customer incentive;
- Education and promotional efforts to inform customers about the energy saving benefits of recycling their older inefficient refrigerators or freezers, including brochures, promotional material, and utility website content;
- Refrigerator and freezer recycling in accordance with established U.S. Environmental Protection Agency ("EPA") best practice industry standards to ensure optimal levels of recycled material and environmental compliance;
- Working with retailers to distribute information about the program and the energy saving benefits of recycling inefficient refrigerators and freezers;
- Removal and proper disposal of the chlorofluorocarbons ("CFCs") (a potent greenhouse gas used as a blowing agent in older foam insulation products) contained in many older appliances - a significant additional environmental benefit of the program; and
- Customer outreach achieved when the recycling contractor leaves behind additional literature and information about other EE DSM programs and opportunities.

### **Program Modification or New Measures for 2014**

No new measures are included for 2014. TEP will change the customer incentive from \$30 to \$50 to increase the level of participation. This is consistent with a request from APS in their 2013 EE Implementation Plan. In addition, Salt River Project ("SRP") has a \$50 incentive and UNS Electric found it necessary to increase their incentive from \$30 to \$50 in order to stimulate participation. The increase in incentive will not impact the cost-effectiveness of the measure.

### **Delivery and Marketing Strategy**

The program delivery strategy consists of a third party IC who will provide implementation services, including eligibility verification, and scheduling of pick-ups and delivery to proper disposal and recycling centers. The IC will also coordinate prompt processing of incentive payments and marketing of the program.

## **Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan**

The strategy for program delivery, incentive processing, and administration is as follows:

- Appliance pick-up/recycling: an IC will be selected to provide comprehensive turnkey implementation services, from eligibility verification and scheduling of pick-ups, to proper disposal and recycling of turned-in appliances.
- Incentive coordination and processing: the implementation contractor will coordinate prompt processing of incentive payments. A prompt incentive payment is essential to retailer/customer satisfaction, thus the IC will establish protocols and service level requirements that expedite payment.

The program is primarily marketed through mass-market channels (e.g., radio, newspaper, website, etc.) and through brochures. Materials carry a strong consumer education message and leverage the ENERGY STAR<sup>®</sup> brand. The program will also be marketed at retail point-of-sale to increase customer awareness of the program.

### Cost-Effectiveness

All measures in this program were found to be cost-effective using the Societal Test in TEP's 2014 EE Plan analysis. It is anticipated that the Commission will determine the program to be cost-effective in the 2012 Rate Case Order. Additional detail on lifetime energy savings, societal benefits/costs, non-incentive cost per measure for all measures is included in Exhibit 2, Section 2.

### Measurement, Evaluation, and Research Plan

The MER plan will include the following:

- Program Management
  - Energy savings estimates are derived from market research and savings estimates in the Energy Star on-line database based on the make and model number of average units harvested.
  - IC collects necessary customer data and verifies customer eligibility.
  - IC maintains a real-time on-line dashboard that provides TEP historic participation and projected pick-up schedule.
  - IC maintains a database providing information on the size and number of recycled units.
- Annual 3<sup>rd</sup> party review
  - MER contractor verifies information reported by TEP from ICs on-line database.
- Annual 3<sup>rd</sup> party impact evaluation to determine actual energy savings from the prior year is conducted by the MER contractor. Impact evaluation is completed using some or all of the following analysis techniques:
  - Desk review;
  - Customer/contractor questionnaires; and
  - Analysis and energy simulation.
- Cost research on various measures within the portfolio of EE programs to maintain up-to-date information on measure incremental costs.
- Research as necessary, on various measures within the portfolio of EE programs to evaluate changes in baseline conditions due to new codes and standards.
- In addition to annual impact evaluation, the MER contractor will periodically complete process evaluation on the portfolio of EE programs and will incorporate review of new measures and review of delivery tactics. The additional process evaluation includes customer satisfaction surveys.

## **Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan**

### **C. Residential New Construction**

***TEP is requesting budget approval to continue this program with no additional modifications.***

#### Program Description

The Residential New Construction program is an existing program, approved in Commission Decision No. 71638 (April 14, 2010). Approval for Tier 1 homes is anticipated in the 2012 Rate Case Order. The goal of the program is to encourage more efficient new home construction than required by current energy codes and to award incentives to builders who build more energy efficient homes. To qualify for an incentive, homes must be tested by an approved energy rater, and meet efficiency criteria based on a Home Energy Rating System (“HERS”) Index score. On the HERS index scale, a score of 100 is considered the average efficiency of baseline new construction. A HERS index score of 0 represents a home that produces all of its energy through on-site generation from renewable energy. Therefore, the lower the HERS score, the more efficient the home.

#### Program Objectives and Rationale

The objectives of the program are to promote EE building practices. This is accomplished through builder training, and customer awareness.

#### Eligibility

All builders who are licensed, bonded, and insured within the state are eligible to participate in the program, if they are building new residential single family homes, townhomes, duplexes, and triplexes and they agree to the terms of both the Energy Star participation agreement and TEP’s participation requirements.

#### Program Modifications and New Measures for 2014

In 2012 the five jurisdictions<sup>3</sup> in TEP’s service territory adopted new building energy codes International Energy Conservation Code (“IECC”) 2012 to be implemented in 2013. The baseline for Tier 1 homes pending approval in the 2012 Rate Case Order will no longer meet the minimum energy code. TEP has therefore updated the baseline construction standards to meet IECC 2012, reviewed and updated the incremental cost, and re-evaluated the cost-effectiveness of the Residential New Construction program. Multiple tiers will not be used in 2014 and beyond. The updated program will require new homes to meet a minimum HERS score of 65 and the incentive level will be \$1,500/home based on the EE requirement. In addition, a single offering simplifies the program, making it easier to understand and administer.

#### Other Information

TEP will permanently eliminate the following measures as they are either no longer cost-effective or Commission Staff has not recommended the measure be included in the TEP EE Portfolio.

- Energy Smart Homes – Tier 2 (All Electric)
- Energy Smart Homes – Tier 2 (Dual Fuel)
- Energy Smart Homes – Tier 3

#### Delivery and Marketing Strategy

TEP provides program management oversight, marketing and is responsible for recruitment, training, and mentorship of participating builders, sub-contractors, data tracking, rebate processing and technical support.

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<sup>3</sup> Pima County, City of Tucson, Town of Sahuarita, Town of Marana, and Town of Oro Valley

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The program is marketed to select builders primarily through direct business-to-business contacts. The program is also marketed to consumers at home shows and other events focused on home-building, as well as advertised through mass-market and targeted media outlets.

### Cost-Effectiveness

All measures in this program were found to be cost-effective using the Societal Test in TEP's 2014 EE Plan analysis. It is anticipated that the Commission will determine the program to be cost-effective in the 2012 Rate Case Order. Additional detail on lifetime energy savings, societal benefits/costs, non-incentive cost per measure for all measures is included in Exhibit 2, Section 3.

### Measurement, Evaluation, and Research Plan

The MER plan will include the following:

- Program Management
  - Utility staff completes application and participation agreement with local builders.
  - Utility staff verifies builders are participating Energy Star Builders and familiar with construction standards and testing requirements.
  - Builders contact approved HERS raters to conduct necessary inspections and testing to determine HERS rating.
  - Approved HERS raters run energy modeling on home and determines HERS score.
  - Approved HERS raters conduct inspections and testing during construction and reports results to TEP.
  - Post inspection and verification is provided by Residential Energy Services Network ("RESNET") Quality Assurance ("QA") provider and utility technical staff providing Quality Control ("QC") inspections and testing on 10% of homes to validate HERS scores.
  - HERS file is forwarded to MER contractor for validation prior to paying incentive to builders.
- Annual 3<sup>rd</sup> party review
  - MER contractor collects all HERS files from raters and verifies data.
  - MER contractor compares savings from validated HERS files to savings reported by TEP.
  - MER contractor has the option of conducting additional field verification and additional on-site inspections over a 3-year cycle.
- 3<sup>rd</sup> party impact evaluation is completed by the MER contractor each year to evaluate actual energy savings from the prior year. Impact evaluation is completed using some or all of the following analysis techniques:
  - Desk review;
  - Customer/contractor questionnaires;
  - Analysis and energy simulation;
  - On-site inspections; and
  - Metering.
- Cost research is completed by the MER contractor to determine the cost for improved construction techniques within the program to maintain up-to-date information on incremental measure costs.
- Research to evaluate changes in baseline conditions was completed in 2013 due to new codes and standards and will be repeated with subsequent code adoption.
- In addition to annual impact evaluation, the MER contractor will periodically complete process evaluation on the portfolio of EE programs and will incorporate review of new measures and

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review of delivery tactics. The additional process evaluation includes customer satisfaction surveys.

### **D. Existing Homes and Audit Direct Install**

*TEP is requesting budget approval to continue this program with modifications to add one new measure.*

#### Program Description

The Existing Homes and Audit Direct Install program is an existing program, approved previously by the Commission in Decision No. 72028 (December 10, 2010). The program is anticipated to receive approval in the 2012 Rate Case Order. The program is targeted to existing homes in need of EE improvements. The program was approved with two components: the first component was an initial energy audit, which included direct installation of CFLs and advanced power strips; and the second component was the installation of building envelope air-sealing, duct sealing or high-efficiency HVAC equipment through Building Performance Institute (“BPI”) certified contractors. In the initial program request, TEP asked to have two levels of incentives for various measures – one level for prescriptive measures installed without field testing, and a higher level for performance based measures that were tested upon completion.

#### Program Objectives and Rationale

The program’s objective is to achieve energy and demand savings from the installation of EE measures. The program additionally focuses on best building and science principles in an effort to refocus the building industry on EE practices. The program invests in training and mentorship for participating contractors to integrate the “house as a system” philosophy, building science, and BPI certification into their general building practices.

#### Eligibility

All residential customers in TEP’s service territory are eligible to participate.

#### Program Modifications and New Measures for 2014

The audit and direct install component did not work as originally planned due to software issues. The on-site audit component had a marginal cost-effectiveness when originally filed. Currently the on-site audit does not pass cost-effectiveness using the Societal Test in TEP’s 2014 EE Plan analysis. TEP plans to discontinue the audit component of this program in 2013 based on 2012 cost-effectiveness review. TEP will continue to evaluate alternate methods delivering individual customer audits in a cost-effective manner.

Due to uncertainty regarding actual energy savings, the program discontinued measures on a prescriptive basis, requiring contractors to submit blower door/duct blaster performance test results on all air sealing, duct sealing, and HVAC measures. This ensures better accountability for the contractors and allows greater confidence in energy savings realized.

Due to updates in savings and incremental costs and a change in the methodology for determination of utility avoided costs, the equipment component on the Replace-on-Burnout (“ROB”) options for both prescriptive and performance measures were no longer cost effective. TEP has therefore suspended the ROB options from the program, and ROB equipment will be incented through the new HVAC/QI measure discussed below.

TEP recognizes the value of quality installation when any new equipment is installed and proposes to significantly expand the HVAC/QI requirements. In order to qualify for the HVAC/QI incentives, contractors will now be required to record many data points related to the actual installed refrigerant charge and air-flow on all equipment regardless of SEER. Data provided by contractors will be reviewed

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to determine if equipment is installed according to manufacturer specifications and on-site testing will be provided on a random sample of units. Contractors will receive a \$250 incentive for each unit that undergoes quality installation and is validated to meet manufacturer's recommendations for refrigerant charge and air-flow. TEP will continue to train contractors on proper HVAC installation to expand the resource list of trained contractors in the area.

This measure has been determined to be cost-effective using the following information.

Measure	Baseline Description	EE Case Description	Unit	Annual Energy Savings (kWh)	Coincident Demand Savings (kW)	Useful Life (Years)	Incremental Unit Cost	Non-Incentive Program Cost	2014 Participation	Societal Test
HVAC/QI	No QI	With QI	Per Unit	713	0.56	10	\$330	\$137	1,000	1.49

### Delivery and Marketing Strategy

TEP provides program management oversight, marketing and is responsible for: i) recruitment, training, and mentorship of participating contractors; ii) data tracking; iii) rebate processing; and iv) technical support.

TEP provides program marketing and customer awareness-building through website promotion, community interest groups, mass-market channels (e.g., radio, newspaper, etc.), brochures, bill inserts, high bill inquiries, trade ally marketing efforts, contractor enrollment, and training.

### Cost-Effectiveness

All measures in this program were found to be cost-effective using the Societal Test in TEP's new 2014 EE Plan analysis. It is anticipated that the Commission will determine the program to be cost-effective in the 2012 Rate Case Order. Additional detail on lifetime energy savings, societal benefits/costs, non-incentive cost per measure for all measures is included in Exhibit 2, Section 4.

### Measurement, Evaluation, and Research Plan

The MER plan will include the following:

- Program Management
  - Installation Contractors must meet specific program standards including good standing with the Arizona Registrar of Contractors, a B or higher rating with the Better Business Bureau, specific insurance requirements, and the use of BPI certified installers or installation supervision.
  - Pre-application and pre-inspection are provided by installing contractors for items such as insulation, air-sealing, duct-test and repair and HVAC replacement.
  - Installing contractor must complete a detailed program application providing data on pre- and post-installation conditions.
  - Installing contractors provide copies of testing, copies of invoices showing purchase and installation of equipment, and verification of installation.
- Utility staff provides verifications of contractor testing on 10% of installations.
- Annual 3<sup>rd</sup> party review
  - MER contractor collects all applications and test results to verify installing contractor's data.
  - MER contractor compares TEP reported information to data collected from installing contractors.
  - MER contractor provides field verification on a random sample of installations on a rotating basis (3-year cycle).

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- 3<sup>rd</sup> party impact evaluation is provided by the MER contractor on each measure to evaluate actual energy savings from the prior year. Impact evaluation is completed using some or all of the following analysis techniques:
  - Desk review;
  - Customer/contractor questionnaires;
  - Analysis and energy simulation;
  - On-site inspections; and
  - Metering
- Cost research is completed by the MER contractor on various measures within the program to maintain up-to-date information on incremental measure costs.
- Research as necessary on various measures within the program is completed by the MER contractor to evaluate changes in baseline conditions due to new codes and standards.
- In addition to annual impact evaluation, the MER contractor will periodically complete process evaluation on the portfolio of EE programs and will incorporate review of new measures and review of delivery tactics. The additional process evaluation includes customer satisfaction surveys.

### **E. Shade Tree**

***TEP is requesting budget approval to continue this program with no additional modifications.***

#### Program Description

This is an existing program that initially started in 1993. The program was updated and approved previously by the Commission in Decision No. 70455 (August 6, 2008). Approval for the program is anticipated in the pending 2012 Rate Case Order. The program promotes energy conservation and environmental benefits by incentivizing customers to plant desert-adapted trees in targeted locations where the trees will provide shade to habited dwellings, thus reducing air conditioning load.

#### Program Objectives and Rationale

The primary objective of the program is to promote the strategic planting of trees to provide shade, thereby reducing the cooling load of homes and associated energy usage. The program also educates school-age children and the public on the conservation and environmental benefits of planting trees.

#### Eligibility

The program is open to all residential customers in TEP service territory living in single family detached homes, townhomes, and mobile homes. Small business, schools and community organizations can also receive shade trees through this program but must follow all the program planting and tree type requirements. Each residence can receive up to two trees per year or four trees if the home has single pane glass or was built prior to 1980. The trees must be desert adapted, low water use (a list is available) and must be planted on the West, East or South side and within 15 feet of an occupied structure.

#### Program Modifications and New Measures for 2014

Initial energy savings for the Shade Tree program was determined in 2008 using the Southwest Community Tree Guide by Gregory McPherson. In 2013, TEP studied the results of MER work for the APS shade tree program which shows significantly lower savings per tree planted in the Phoenix area than TEP was reporting in the Tucson area. TEP initiated discussions with its 3<sup>rd</sup> party evaluator, and based upon new analysis has reduced energy savings to 56 kWh/year per tree. TEP has also adjusted incremental costs and maintenance costs and used all these adjustments in its 2014 benefit/cost analysis.

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### Delivery and Marketing Strategy

Program delivery is provided by Trees for Tucson, a non-profit organization, and consists of a customer completing an application and sending it to Trees for Tucson. Trees for Tucson then delivers approved trees to the customer and also provides written information on proper planting, care, and maintenance. The customer pays \$8.00 per tree. TEP employees currently inform customers about the program during speaking engagements and outreach presentations, website promotion, presentations at schools, and tree care workshops.

### Cost-Effectiveness

All measures in this program were found to be cost-effective using the Societal Test in TEP's 2014 EE Plan analysis. It is anticipated that the Commission will determine the program to be cost-effective in the 2012 Rate Case Order. Additional detail on lifetime energy savings, societal benefits/costs, and non-incentive cost per measure for all measures is included in Exhibit 2, Section 5.

### Measurement, Evaluation, and Research Plan

The MER plan will include the following:

- Program Management
  - Trees for Tucson collects necessary data and verifies customer information through the application process.
  - Trees for Tucson delivers trees to customers and provides planting and maintenance information.
  - Post inspection and verification of installation is completed by utility staff on 10-15% of all installations.
- Annual 3<sup>rd</sup> party review
  - MER contractor provides desk review and telephone calls to customers for verification of Trees for Tucson data.
  - MER contractor provides desk review and telephone calls to customers for verification of TEP's data.
  - MER contractor provides field verification on a random sample of actual installations on a rotating basis (3-year cycle).
- 3<sup>rd</sup> party evaluation was completed by the MER contractor in 2013 for shade trees to determine deemed savings estimates, and the updated information is used in the 2014 EE Plan. Impact evaluation used the following analysis techniques:
  - Desk review;
  - Customer/contractor questionnaires;
  - Analysis and/or energy simulation; and
  - Results from utility on-site inspections.
- Cost research for Shade Trees was completed in 2013 to maintain up-to-date information on incremental measure costs and is used in the 2014 EE Plan.
- In addition to annual impact evaluation, the MER contractor will periodically complete process evaluation on the portfolio of EE programs and will incorporate review of new measures and review of delivery tactics. The additional process evaluation will include customer satisfaction surveys.

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### **F. Low-Income Weatherization**

*TEP is requesting budget approval to continue this program with no additional modifications.*

#### Program Description

The Low Income Weatherization ("LIW") program is an existing program, approved previously by the Commission in Decision No. 70456 (August 6, 2008). Approval for the program is anticipated in the 2012 Rate Case Order. The LIW program helps conserve energy and lower utility bills in TEP households with limited incomes. Weatherization measures fall into four major categories: i) duct repair; ii) pressure management/infiltration control; iii) attic insulation; and iv) repair or replacement of non-functional or hazardous appliances. Weatherization is conducted in accordance with the Weatherization Assistance Program ("WAP"), a program funded by the U.S. Department of Energy. Household income and participation guidelines will be consistent in an on-going manner with current policy criteria used by the Governor's Office on Energy Policy ("GOEP").

#### Program Objectives and Rationale

The main objectives of the program are to lower low-income customers' energy consumption in conjunction with GOEP and WAP rules, as well as to increase the number of homes weatherized annually. Program funds provide up to \$3,000 per residence to be used for EE weatherization measures, equipment replacement and/or repair, etc. Community action agencies are allowed to use up to 25% of their annual budget for Health and Safety related repairs. Agencies may request a waiver of the \$3,000 limitation on a case-by-case basis.

#### Eligibility

Program participants must be customers of TEP with incomes that fall within the Low-income Home Energy Assistance Program ("LIHEAP") low-income qualifications. TEP will administer qualification criteria according to LIHEAP qualifications, which may change from time to time. Customers must be approved by a participating agency within TEP's service territory.

#### New Measures for 2014

No new measures are included for 2014.

#### Delivery and Marketing Strategy

The program is delivered by community action agencies approved by the GOEP. Agencies in Tucson include Pima County Community Services ("PCCS") and Tucson Urban League ("TUL"). Both provide program administration, planning, promotion, and verification of participant eligibility, as well as labor, materials, equipment and tracking software. Funding is provided to both agencies from TEP upon documentation of work completed.

Due to the popularity of the program, advertising and promotion occurs primarily through community action agency partners that deliver presentations to community organizations, leave information at neighborhood community and recreation centers, or respond to calls directed from TEP. TEP also promotes the program through its website and provides information during speaking engagements and outreach presentations.

#### Cost-Effectiveness

All measures in this program were found to be cost-effective using the Societal Test in TEP's 2014 EE Plan analysis. It is anticipated that the Commission will determine the program to be cost-effective in the 2012 Rate Case Order. Additional detail on lifetime energy savings, societal benefits/costs, non-incentive cost per measure for all measures is included in Exhibit 2, Section 6.

## **Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan**

### Measurement, Evaluation, and Research Plan

The MER plan will include the following:

- Program Management
  - Agencies collect necessary customer data through the application process and verify weatherization measures and cost.
  - Agency inputs data into an on-line tracking tool maintained and administered by GEOP.
  - TEP is provided 'read-only' access to the on-line tracking tool in order to track jobs and savings.
  - Agencies complete test in (blower door, audit, etc.) and test out (blower door, duct test, etc.).
  - Agencies bill TEP for work completed, and TEP verifies work in on-line tracking tool prior to payment.
  - Agency contractors are required to meet certain qualifications to participate.
- Annual 3<sup>rd</sup> party review
  - The GEOP completes 100% desk review of all of the low-income projects submitted by the agencies.
  - The GEOP completes desk review and telephone calls to customers for verification of agency data.
  - Post inspections and field verifications of installations are completed by the GOEP on 10% the homes.
  - Annual 3<sup>rd</sup> party impact evaluation for the LIW program is provided by GOEP after they complete state-wide evaluation of actual energy savings using bill-analysis techniques.

### **G. Multi-Family**

***TEP is requesting budget approval to continue this program with no modifications.***

#### Program Description

The Multi-Family program is a pending program from TEP's 2011-2012 EE Implementation Plan. The Multi-Family program is anticipated to gain Commission approval in the 2012 Rate Case Order. The program targets multi-family buildings with five or more dwelling units to install CFLs and low-flow water devices. Additionally, multi-family facility managers are encouraged to partake in the C&I Comprehensive program, which promotes EE measure installation for the common areas.

#### Program Objectives and Rationale

The EE potential in the multi-family housing market remains largely underutilized and represents a significant potential to increase the Company's program portfolio. Because of various market barriers, such as split incentives, capital constraints, and lack of awareness, EE improvements typically fall far below on a multi-family housing unit's priority list. Through the direct installation and renovation/rehabilitation implementation framework, this program fills the gap and provides substantial energy savings.

The objectives of the program are: i) to reduce peak demand and overall energy consumption in the multifamily housing market; ii) to promote EE retrofits for both dwelling units and common areas; and iii) to increase overall awareness about the importance and benefits of EE improvements to the landlord and property ownership community.

## **Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan**

### **Program Eligibility**

All existing multifamily housing complexes and new construction projects within TEP service territory with five or more dwelling units are eligible for the program. The program promotes EE improvements in both dwelling units and common areas. Eligible projects include acquisition, renovation and rehabilitation projects, and EE retrofits to existing facilities. Eligible facilities include apartment complexes and common areas of apartment and condominium complexes. All TEP customers who are property owners of existing residential multifamily complexes with five or more dwelling units are eligible for the program.

### **New Measures for 2014**

No new measures are included for 2014.

### **Delivery and Marketing Strategy**

Program delivery is provided by TEP staff. To encourage EE upgrades, major renovation and rehabilitation projects, as well as EE retrofits of existing structures, the program will initially offer the following delivery tracks:

- A direct installation of selected low-cost EE improvements in existing complexes; and
- Common area EE improvements in existing complexes will be handled through the C&I Facilities program.

As the program develops, TEP will examine a third track to encouraging more dwelling unit EE improvements in existing complexes that are not part of major renovation/rehabilitation projects.

Marketing and communications strategies include notifying complex managers and owners through updates to the website, training seminars, call center on-hold messages, direct mail promotion, outreach to rental housing industry associations, and working with contractors and industry specialists. Primary emphasis is placed on low-income, subsidized housing complexes and on larger, older, and less energy efficient complexes.

### **Cost-Effectiveness**

All measures in this program were found to be cost-effective using the Societal Test in TEP's 2014 EE Plan analysis. It is anticipated that the Commission will determine the program to be cost-effective in the 2012 Rate Case Order. Additional detail on lifetime energy savings, societal benefits/costs, non-incentive cost per measure for all measures is included in Exhibit 2, Section 7.

### **Measurement, Evaluation, and Research Plan**

The MER plan will include the following:

- Program Management
  - Utility staff contacts owners/managers of multi-family complex and collects necessary application data.
  - Utility staff provides pre-installation inspection to verify number of eligible measures.
  - Utility staff delivers products to facility manager for the multi-family complex with proper instructions for installation.
  - Utility staff collects information about measures being removed and tracks measures installed to enable accurate accounting of energy savings.
  - Post inspection and verification of installation is conducted on a random sample of apartment units by utility staff.

## **Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan**

- Annual 3<sup>rd</sup> party review
  - MER contractor collects all information from deliveries, installations, and inspections for verification.
  - MER contractor may conduct another random sample field verification of items installed.
- 3<sup>rd</sup> party impact evaluation is provided by the MER contractor to evaluate actual energy savings from the prior year. Impact evaluation is completed using some or all of the following analysis techniques:
  - Desk review;
  - Customer/contractor questionnaires; and
  - On-site inspections.
- Cost research is provided by the MER contractor on measures within the Multi-Family program to maintain up-to-date information on incremental measure costs.
- Research as necessary is provided by the MER contractor on measures within the programs to evaluate changes in baseline conditions due to new codes and standards.
- In addition to annual impact evaluation, the MER contractor will periodically complete process evaluation on the portfolio of EE programs and will incorporate review of new measures and review of delivery tactics. The additional process evaluation includes customer satisfaction surveys.

## **V. Commercial and Industrial Programs**

The following section presents a summary of TEP's commercial and industrial ("C&I") programs including existing, pending, and new programs and measures, as well as enhancements to existing programs consistent with the requirements of A.A.C. R-14-2-2407.

### **A. C&I Comprehensive**

*TEP is requesting budget approval and approval to offer additional measures in 2014.*

#### Program Description

Originally called the Non-Residential Existing Facilities program, the C&I Comprehensive program is an existing program, approved previously by the Commission in Decision No. 70403 (July 3, 2008). Approval for the program is anticipated in the 2012 Rate Case Order. The program offers incentives for a select group of retrofit and replace-on-burnout ("ROB") EE measures in existing facilities. Eligible participants include small and large commercial customers and schools. The programs offer incentives for the installation of EE measures including: lighting equipment and controls; HVAC equipment; motors and motor drives; compressed air; refrigeration measures; appliances; and plug load devices.

The incentive levels for C&I measures represent the weighted result of the average incentive for a measure, which varies depending on the tons or horsepower of the equipment being rebated. The actual incentive for a particular measure may vary due to the size of the equipment being installed. With the exception of custom measures, the incentive levels for the C&I Comprehensive program have been designed to not exceed 75% of incremental costs. Incentives for custom measures are limited to 50% of incremental costs.

#### Program Objectives and Rationale

The C&I Comprehensive program is designed to address barriers of entry for this market segment, including issues of limited investment capital, limited awareness of energy cost savings, and required short-term payback. The program's purpose is to persuade large business customers to install high-efficiency equipment at their facilities and encourage contractors to promote the program.

#### Eligibility

Program eligibility is open to all existing commercial customers within TEP's service territory who are interested in installing retro-fit or replacement EE measures to increase EE of the facility and reduce costs. This program is targeted to the large commercial and industrial customer because TEP has separate programs and budgets for small business and schools facilities customers. However, small business customers and school facilities would be allowed to participate in the C&I Comprehensive program, as long as funds are available.

## Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan

### New Measures for 2014

Table 5-1 presents new measures to be incentivized by the program in 2014.

**Table 5-1. Measure Efficiencies, Incentive Level, Participation, and Benefit/Cost Ratio**

Program Measures	Base Efficiency	High Efficiency	Avg. Incentive	Estimated Participation	Societal Test
Canopy LED	458 Watt	108 Watt	\$100.00	300	1.89
LED Indoor Lights	56 Watt Incan	7 Watt LED	\$20.00	300	1.54
Refrigeration LED Strip Lighting	32 Watt-T-8	20 Watt LED	\$27.50	50	1.35
Computer Power Monitoring System	No power monitor	Computer power monitor	\$8.00	2,000	2.73
Pulse Start Metal Halide - Interior	Pulse Start MH Lamp	Conventional MH Lamp	\$100.00	75	1.45
Pulse Start Metal Halide - Exterior	Pulse Start MH Lamp	Conventional MH Lamp	\$90.00	75	1.56
EMS - HVAC and Cold Deck Reset	No EMS	With EMS	\$0.31	250	1.68
Variable Refrigerant Flow Systems	Standard Refrigerant Flow	Variable Refrigerant Flow	\$2.00	250	3.07
Hotel Room HVAC Control	Standard-no sensor	Sensor Control	\$50.00	50	2.26
HVAC System test and repair	No test and repair	With test and repair	\$360.00	25	2.31
Evaporative Fan Control	Shaded pole motor-no control	EC motor with control	\$75.00	10	1.59

### Other Information

The following existing and pending measures are very close to meeting the Societal Test with a value of 0.93 or better. If the Commission were to consider the non-energy benefits that are not monetized as part of Commission Staff's approved methodology and/or if the Commission were to use the discount rate that is used as an industry standard in analysis of the Societal Test, these measures would exceed a Societal Test of 1.0 or better. TEP is therefore requesting approval of these measures for 2014. Commission Staff has historically recommended measures that fall just below a benefit/cost ratio of 1.0 because they do not monetize the non-energy benefits.

- 18 SEER Packaged and Split AC's SCT = 0.99
- LED Pedestrian Signals SCT = 0.95
- 15 SEER Packaged and Split AC's SCT = 0.99
- 16 SEER Packaged and Split AC's SCT = 0.93

TEP will suspend the following existing and pending measures in 2014 because they are no longer cost-effective. TEP will however, continue to evaluate cost-effectiveness in future years using updated avoided cost, updated incremental costs, etc. TEP will then exercise the option of including the measures when they pass the benefit/cost test in the future.

- Coin-Operated Washing Machines (Advanced)
- LED Street and Parking Lights
- Night Covers (for small refrigerating cases)

## **Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan**

TEP will permanently eliminate the following measure as it is no longer cost-effective and TEP does not anticipate a change in the future.

- Standard T-8 to Premium T-8 Lighting

Since 2008, cost-effective measures have been approved by the Commission for the C&I Comprehensive program, Small Business Direct Install program, and recommended for approval in the pending Schools Facilities program. TEP is requesting approval to offer all previously approved commercial measures, no matter what commercial program, for inclusion in all TEP commercial programs. This will improve efficiency by maintaining consistency for contractors and customers. This will also reduce the time and cost of updating multiple measure analysis worksheets and will reduce the overall confusion of identifying which measures have been adopted in each program. TEP will continue to maintain separate budgets for each commercial program to better track activity, incentive payments, etc. A detailed list of all commercial measures either pending or previously approved by the Commission is included in Exhibit 3.

### **Delivery and Marketing Strategy**

The C&I Comprehensive program is offered to large commercial customers through either self-install or utilizing an installing contractor. Contractors work with individual customers and the customers receive incentive payment after installation of EE equipment. The program also provides consumers and trade allies with educational and promotional pieces designed to arm decision makers in the commercial market with the ability to make informed choices.

The marketing strategy includes education seminars tailored to the business market, website promotion, outreach and presentations at professional and community forums, and direct outreach to customers.

### **Cost-Effectiveness**

Most measures in this program were found to be cost-effective using the Societal Test in TEP's 2014 EE Plan analysis. It is anticipated that the Commission will determine the program to be cost-effective in the 2012 Rate Case Order. Additional detail on lifetime energy savings, societal benefits/costs, and non-incentive cost per measure for all measures is included in Exhibit 2, Section 8.

### **Measurement, Evaluation, and Research Plan**

The MER plan will include the following:

- Program Management
  - IC collects customer and installing contractor data from application and determines program eligibility.
  - IC verifies measures for each job and collects measure cost from installing contractor invoices.
  - IC performs pre-application inspections and provides final approval to installing contractors.
  - IC provides post inspection and verification of installation.
  - Installing contractors are required to meet certain qualifications to participate.
  - Utility staff assists with post inspection and verification of installations for IC as appropriate.
  - IC collects information on all energy saving installations and maintains information in tracking data base. Information includes deemed or calculated energy and demand savings, installation date, baseline equipment, EE equipment, hours of operation, facility type, incremental cost of equipment, incentive amount, and incentive payment date.

## **Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan**

- Annual 3<sup>rd</sup> party review
  - MER contractor provides certification of IC data.
  - MER contractor provides certification of TEP data.
  - MER contractor provides random field verification of measures on a rotating basis (3-year cycle).
- 3<sup>rd</sup> party impact evaluation is provided by the MER contractor to evaluate actual energy savings from the prior year. Impact evaluation is completed using some or all of the following analysis techniques:
  - Desk review;
  - Customer/contractor questionnaires;
  - Analysis and energy simulation;
  - On-site inspections; and
  - Metering.
- Cost research is completed by the MER contractor on various measures within the program to maintain up-to-date information on incremental measure costs.
- Research as necessary on various measures within the program is completed by the MER contractor to evaluate changes in baseline conditions due to new codes and standards.
- In addition to annual impact evaluation, the MER contractor will periodically complete process evaluation on the portfolio of EE programs and will incorporate review of new measures and review of delivery tactics. The additional process evaluation includes customer satisfaction surveys.

### **B. Small Business Direct Install**

*TEP is requesting budget approval to continue this program and approval to offer additional measures in 2014.*

#### Program Description

The TEP Small Business Direct Install program is an existing program, approved previously by the Commission in Decision No. 70457 (August 6, 2008). Approval for the program is anticipated in the 2012 Rate Case Order. The program is open to participation by all existing small commercial customers in the TEP service territory. The program provides incentives for a select group of retrofit and ROB EE measures in existing small businesses, including high-efficiency lighting equipment upgrades, high-efficiency HVAC equipment, lighting controls, programmable thermostats, and selected refrigeration measures. The direct install component utilizes an on-line proposal generation and project tracking application to reduce the transaction costs. TEP pays incentives up to 90% of incremental costs. Small businesses can also participate in the C&I Comprehensive program with reduced incentive amounts.

#### Program Objectives and Rationale

The primary goal of the program is to encourage small commercial customers in TEP's service territory to install EE measures in existing facilities. More specifically, the program is designed to:

- Encourage installation of high-efficiency lighting equipment and controls, HVAC equipment, energy-efficient refrigeration system retrofits, etc.;
- Encourage contractors to promote the program and provide turn-key installation services to small business customers;
- Assure the participation process is clear, easy to understand and simple; and
- Increase the awareness and knowledge of facility managers and other decision makers on the benefits of high-efficiency equipment and systems.

## **Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan**

### Eligibility

Program eligibility is open to all commercial customers within TEP's service territory taking service under a small commercial rate tariff. These customers are also allowed to participate in the C&I Comprehensive program, as long as funding is still available.

### New Measures for 2013

The proposed new measures for the Small Business Direct Install program are identical to the new measures proposed for the C&I Comprehensive program (listed above in Section V-Commercial and Industrial Programs, A. C&I Comprehensive).

### Other Information

Since 2008, cost-effective measures have been approved by the Commission for the C&I Comprehensive program, Small Business Direct Install program, and recommended for approval in the pending Schools Facilities program. TEP is requesting approval to offer all previously approved commercial measures, no matter what commercial program, for inclusion in all TEP commercial programs. See Section V, subsection A, C&I Comprehensive, Other Information for further detail.

### Delivery and Marketing Strategy

TEP has assigned an in-house program manager to oversee the program and provide guidance on program activities consistent with TEP's goals and customer service requirements. The IC working with TEP provides the primary contact for small business customers. The IC is responsible for application and incentive processing, monitoring the installation contractors, participation tracking and reporting, and overall quality control and management of the delivery process.

The marketing and communications strategy is designed to inform small business customers about how they can participate and realize the benefits of the program. The strategy includes specific outreach to customers and contractors who complete retrofit projects for small business. Another important component of the marketing plan is a focus on the content and functionality of the TEP website, which directs customers to information about the program.

### Cost-Effectiveness

All measures in this program were found to be cost-effective using the Societal Test in TEP's 2014 EE Plan analysis. It is anticipated that the Commission will determine the program to be cost-effective in the 2012 Rate Case Order. Additional detail on lifetime energy savings, societal benefits/costs, non-incentive cost per measure for all measures is included in Exhibit 2, Section 9.

### Measurement, Evaluation, and Research Plan

The MER plan is consistent with the previously filed strategy and will include the following:

- Program Management
  - IC collects customer and installing contractor data from application and determines program eligibility.
  - IC verifies measures for each job and enters them into the small business database. The cost data for each measure is collected from contractors and built into the database in advance.
  - IC performs pre-application inspections and provides final approval to installing contractors.
  - IC provides post inspection and verification of installation.
  - Installing contractors are required to meet certain qualifications to participate.
  - Utility staff assists with post inspection and verification of installations for IC, as appropriate.

## **Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan**

- IC collects information on all energy saving installations and maintains information in tracking data base. Information includes deemed or calculated energy and demand savings, installation date, baseline equipment, EE equipment, hours of operation, facility type, incremental cost of equipment, incentive amount and incentive payment date.
- Annual 3<sup>rd</sup> party review
  - MER contractor provides certification of IC data.
  - MER contractor provides certification of TEP's data.
  - MER contractor provides random field verification of measures on a rotating basis (3-year cycle).
- 3<sup>rd</sup> party impact evaluation is provided by the MER contractor to evaluate actual energy savings from the prior year. Impact evaluation is completed using some or all of the following analysis techniques:
  - Desk review;
  - Customer/contractor questionnaires;
  - Analysis and energy simulation;
  - On-site inspections; and
  - Metering.
- Cost research on various measures within the Small Business program is completed by the MER contractor each year to maintain up-to-date information on incremental measure costs.
- Cost research is completed by the MER contractor on various measures within the program to maintain up-to-date information on incremental measure costs.
- Research as necessary on various measures within the program is completed by the MER contractor to evaluate changes in baseline conditions due to new codes and standards.
- In addition to annual impact evaluation, the MER contractor will periodically complete process evaluation on the portfolio of EE programs and will incorporate review of new measures and review of delivery tactics. The additional process evaluation includes customer satisfaction surveys.

### **C. Commercial New Construction**

***TEP is requesting budget approval to continue this program with no additional modifications.***

#### **Program Description**

The Commercial New Construction program is an existing program, approved previously by the Commission in Decision No. 70459 (August 6, 2008). Approval for the program is anticipated in the 2012 Rate Case Order. Customers are provided incentives for building new commercial facilities that exceed ASHRE 90.1 Standard 2004 version. The incentive is calculated at \$0.10/kWh for the first year reduction in kWh.

#### **Program Objectives and Rationale**

The primary goal of the program is to encourage more energy efficient new building design for non-residential projects in TEP's service area. This objective is reached by providing incentives to building owners/developers to design and build more energy efficient buildings and offering assistance to design teams to offset the additional cost and time of exploring more energy efficient design. The program helps overcome market barriers, such as increased upfront cost of an integrated design approach, lack of awareness and knowledge about the benefits of a more energy efficient building, and the cost and the performance of EE measures. It encourages building owners/developers and the design community to consider EE options as early in the design process as possible.

## **Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan**

### New Measures for 2014

There are no individual measures in the Commercial New Construction program.

### Delivery and Marketing Strategy

There are no significant changes in implementation approach, delivery or marketing strategy for the items in this program.

### Cost-Effectiveness

It is anticipated that the Commission will determine the program to be cost-effective in the 2012 Rate Case Order. Additional detail on lifetime energy savings, societal benefits/costs, non-incentive cost per measure for all measures is included in Exhibit 2, Section 10.

### Other Information

In 2012 the five jurisdictions<sup>4</sup> in TEP's service territory adopted new building energy codes (IECC 2012) to be implemented in 2013. Because adoption rates vary, it is anticipated that full enforcement of the new codes will phase in slowly during the following year. As a result of adoption of the new building codes, TEP will evaluate the impact from a new baseline for construction of commercial buildings and will file an update in its 2015 EE Plan. TEP will continue to evaluate cost-effectiveness in future years using updated avoided cost, updated incremental costs, etc.

### Measurement, Evaluation, and Research Plan

The MER plan will include the following:

- Program Management
  - IC collects necessary data for application and verifies that all necessary information is provided by the customer.
  - IC compares the building design to ASHRAE 90.1 Standard 2004 version and verifies analysis of energy savings and estimated cost.
  - IC conducts post installation inspection and verification of installation.
- Annual 3<sup>rd</sup> party review
  - MER contractor collects all information on completed jobs for verification of implementation contractor's data.
  - MER contractor may conduct additional field verification of jobs participating in the program.
- Annual 3<sup>rd</sup> party impact evaluation for the Commercial New Construction program is provided by the MER contractor to evaluate actual energy savings from the prior year. Impact evaluation is completed using some or all of the following analysis techniques:
  - Desk review;
  - Customer/contractor questionnaires;
  - Analysis and energy simulation;
  - On-site inspections; and
  - Metering.
- In addition to annual impact evaluation, the MER contractor will periodically complete process evaluation on the portfolio of EE programs and will incorporate review of new measures and review of delivery tactics. The additional process evaluation includes customer satisfaction surveys.

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<sup>4</sup> Pima County, City of Tucson, Town of Sahuarita, Town of Marana, and Town of Oro Valley

## Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan

### D. Bid for Efficiency Pilot Program

*TEP is requesting budget approval to continue this program with no additional modifications.*

#### Program Description

The Bid for Efficiency (“BFE”) Pilot program is a pending program from the 2011-2012 EE Implementation Plan. Approval for the program is anticipated in the 2012 Rate Case Order. The program is designed to take an innovative approach to EE by using elements of competition and the potential for high rewards to enhance customer interest. Customers or project sponsors can conceive their own EE projects and then bid competitively for incentives within program guidelines. TEP selects winning applicants based on specified criteria.

BFE participants and project sponsors include commercial customers, Energy Service Companies (“ESCOs”) or other aggregators who organize proposals that involve multiple sites. The BFE Pilot program offers solutions to the typical customer barriers to entry, such as small savings levels at multiple sites, longer payback periods, and organizing contractors, as well as offering a simplified application process. Results will be verified through MER activity.

Pilot program results will be evaluated after 2014. If the market response and measure savings indicate the program is cost effective, TEP will offer the full program in its 2016 EE Implementation Plan.

#### Program Objectives and Rationale

BFE encourages customers and project sponsors to think creatively and to develop projects designed to optimize system energy use as a whole, rather than considering the energy usage of each individual piece of equipment. The program fosters customer-driven project activity (e.g., customers select appropriate measures and professionals to implement measures), and encourages the implementation of comprehensive, multi-measure projects.

#### New Measures for 2014

There are no individual measures in the BFE program.

#### Delivery and Marketing Strategy

The program is delivered through an IC. TEP markets the program directly to key customers and aggregators. Particular emphasis is paid to key market sectors such as grocery and convenience stores. TEP, and/or its IC, conducts informational meetings with potential participants and project sponsors to explain the program rules and encourage participation.

#### Cost-Effectiveness

It is anticipated that the Commission will determine the program to be cost-effective in the 2012 Rate Case Order. Additional detail on lifetime energy savings, societal benefits/costs, non-incentive cost per measure for all measures is included in Exhibit 2, Section 11.

#### Measurement, Evaluation, and Research Plan

The MER plan will include the following:

- Program Management
  - IC collects necessary data for application and verifies that all necessary information is provided by the customer.
  - IC compares individual bids and verifies analysis of energy savings and estimated cost from each bid.
  - IC selects jobs based on the lowest cost per kWh reduction and notifies applicants of award.
  - IC conducts post installation inspection and verification of installation.

## **Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan**

- Annual 3<sup>rd</sup> party review
  - MER contractor collects all information on completed jobs for verification of IC data.
  - MER contractor may conduct additional field verifications of jobs participating in the program.
- Annual 3<sup>rd</sup> party impact evaluation for the BFE program is provided by the MER contractor to evaluate actual energy savings from the prior year. Impact evaluation is completed using some or all of the following analysis techniques:
  - Desk review;
  - Customer/contractor questionnaires;
  - Analysis and energy simulation;
  - On-site inspections; and
  - Metering.
- In addition to annual impact evaluation, the MER contractor will periodically complete process evaluation on the portfolio of EE programs and will incorporate review of new measures and review of delivery tactics. The additional process evaluation includes customer satisfaction surveys.

### **F. Retro-Commissioning**

***TEP is requesting budget approval to continue this program with no additional modifications.***

#### Program Description

The Retro-Commissioning (“RCx”) program is a pending program from the 2011-2012 EE Implementation Plan. The program is anticipated to receive approval by the Commission in the pending 2012 Rate Case Order. The program uses a systematic approach to identify building equipment and processes that are not achieving optimal efficiency in existing facilities. Eligible program applicants receive free screening energy audits. Participants also receive training to ensure proper operating and maintenance practices over time.

#### Program Objectives and Rationale

The RCx program seeks to generate significant energy savings by returning existing equipment to an efficient operating condition. The program delivers customer benefits by lowering energy bills and improving building performance and occupant comfort while reducing maintenance calls. The program develops an RCx contractor pool, and enables TEP to build relationships with C&I customers, thus leading to other areas of participation in TEP’s portfolio of EE programs. RCx programs in other utility service territories have delivered average energy savings in the range of 5-15% per facility, and measures implemented as a result of the program’s activity typically pay for themselves in less than two years.

#### New Measures for 2014

There are no individual measures in the RCx program.

#### Delivery and Marketing Strategy

The RCx program is marketed using traditional forms of media (e.g., print, web, newsletters, etc.), as well as targeted direct mail and outreach to engineering and trade associations. TEP and the IC also reach out directly to contractors who currently are, or could be, practicing in this area. The TEP website has been updated to include information and links for participation. TEP account managers have been utilized to reach out to larger customers to encourage participation.

## **Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan**

### Cost-Effectiveness

It is anticipated that the Commission will determine the program to be cost-effective in the 2012 Rate Case Order. Additional detail on lifetime energy savings, societal benefits/costs, non-incentive cost per measure for all measures is included in Exhibit 2, Section 12.

### Measurement, Evaluation, and Research Plan

The MER plan will include the following:

- **Program Management**
  - IC collects necessary data for application and verifies that all necessary information is provided by the customer.
  - IC conducts post installation inspection and verification of installation.
- **Annual 3<sup>rd</sup> party review**
  - MER contractor collects all information on completed jobs for verification of IC data.
  - MER contractor may conduct additional field verifications of jobs participating in the program.
- **Annual 3<sup>rd</sup> party impact evaluation for the RCx program is provided by the MER contractor to evaluate actual energy savings from the prior year. Impact evaluation is completed using some or all of the following analysis techniques:**
  - Desk review;
  - Customer/contractor questionnaires;
  - Analysis and energy simulation;
  - On-site inspections; and
  - Metering.
- **In addition to annual impact evaluation, the MER contractor will periodically complete process evaluation on the portfolio of EE programs and will incorporate review of new measures and review of delivery tactics. The additional process evaluation includes customer satisfaction surveys.**

### **C. School Facilities**

***TEP is requesting budget approval and approval to offer additional measures in 2014.***

#### Program Description

The TEP School Facilities program is a pending program from the 2011-2012 EE Implementation Plan. The program is anticipated to receive approval in the 2012 Rate Case Order. The program is open to participation by existing K-12 school facilities in the TEP service territory, including charter schools. The program utilizes the same delivery method and pays incentives for the same DSM measures as the TEP Small Business Direct Install program, but with a separate budget reserved for schools. The program offers incentives for a select group of retrofit and ROB EE measures in existing K-12 school facilities. The efficiency measures include high-efficiency lighting equipment upgrades, high-efficiency HVAC equipment, lighting controls, programmable thermostats, and selected refrigeration measures. The direct install component utilizes an on-line proposal generation and project tracking application to reduce the transaction costs. TEP pays incentives up to 100% of incremental costs for participating schools. Schools can also participate in the Small Business Direct Install or the C&I Comprehensive programs with reduced incentive amounts.

## **Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan**

### **Program Objectives and Rationale**

The primary goal of the program is to encourage K-12 schools in TEP's service territory to install EE measures in existing facilities. More specifically, the program is designed to:

- Encourage schools to install high-efficiency lighting equipment and controls, HVAC equipment, and energy-efficient refrigeration system retrofits;
- Encourage contractors to promote the program and provide turn-key installation services to schools;
- Assure the participation process is clear, easy to understand and simple; and
- Increase the awareness and knowledge of school facility managers and other decision makers on the benefits of high-efficiency equipment and systems.

### **Eligibility**

Program eligibility is open to all existing K-12 school facilities, including charter schools, within TEP's service territory.

### **New Measures for 2014**

The proposed new measures for the Schools Facilities program are identical to the new measures proposed for the C&I Comprehensive program (listed above in Section V-Commercial and Industrial Programs, A. C&I Comprehensive).

### **Other Information**

Since 2008, cost-effective measures have been approved by the Commission for the C&I Comprehensive program, Small Business Direct Install program, and recommended for approval in the pending Schools Facilities program. TEP is requesting approval to offer all previously approved commercial measures, no matter what commercial program, for inclusion in all TEP commercial programs. See Section V, subsection A, C&I Comprehensive, Other Information for further detail.

### **Delivery and Marketing Strategy**

TEP has assigned an in-house program manager to oversee the program, provide guidance on program activities consistent with TEP's goals and customer service requirements, and provide a contact point for schools. The IC is responsible for application and incentive processing, monitoring the installation contractors, participation tracking and reporting, and overall quality control and management of the delivery process.

The marketing and communications strategy is designed to inform schools of the availability and benefits of the program and how they can participate. The strategy includes specific outreach to schools and contractors who retrofit schools. An important component of the marketing plan is content on and functionality of the TEP website, which directs schools to information about the program.

### **Cost-Effectiveness**

All measures in this program were found to be cost-effective using the Societal Test in TEP's 2014 EE Plan analysis. It is anticipated that the Commission will determine the program to be cost-effective in the 2012 Rate Case Order. Additional detail on lifetime energy savings, societal benefits/costs, non-incentive cost per measure for all measures is included in Exhibit 2, Section 13.

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### Measurement, Evaluation, and Research Plan

The MER plan will include the following:

- Program Management
  - IC collects customer and installing contractor data from application and determines program eligibility.
  - IC verifies measures for each job and enters into the small business database. The cost data for each measure is collected from contractors and built into the database in advance.
  - IC performs pre-application inspections and provides final approval to installing contractors.
  - IC provides post inspection and verification of installation.
  - Installing contractors are required to meet certain qualifications to participate.
  - Utility technical staff assists with post inspection and verification of installations for IC as appropriate.
  - IC collects information on all energy saving installations and maintains information in tracking data base. Information includes deemed or calculated energy and demand savings, installation date, baseline equipment, EE equipment, hours of operation, facility type, incremental cost of equipment, incentive amount and incentive payment date.
- Annual 3<sup>rd</sup> party review
  - MER contractor provides certification of IC data.
  - MER contractor provides certification of TEP data.
  - MER contractor provides random field verification of measures on a rotating basis (3-year cycle).
- 3<sup>rd</sup> party impact evaluation is provided by the MER contractor to evaluate actual energy savings from the prior year. Impact evaluation is completed using some or all of the following analysis techniques:
  - Desk review;
  - Customer/contractor questionnaires;
  - Analysis and energy simulation;
  - On-site inspections; and
  - Metering.
- Cost research is completed by the MER contractor on various measures within the program to maintain up-to-date information on incremental measure costs.
- Research as necessary on various measures within the program is completed by the MER contractor to evaluate changes in baseline conditions due to new codes and standards.
- In addition to annual impact evaluation, the MER contractor will periodically complete process evaluation on the portfolio of EE programs and will incorporate review of new measures and review of delivery tactics. The additional process evaluation includes customer satisfaction surveys.

## VI. Behavioral Programs

This section discusses TEP's continuing behavioral suite of programs.

### A. Home Energy Reports

*TEP is requesting budget approval to continue this program with no additional modifications.*

#### Program Description

TEP's Home Energy Report program is an existing program, approved previously by the Commission in Decision No. 72254 (April 7, 2011). The program is anticipated to receive approval by the Commission in the pending 2012 Rate Case Order. The program is designed to affect: 1) habitual behaviors like turning off the lights or adjusting the thermostat; 2) maintenance behaviors such as changing furnace filters and cleaning refrigerator coils; and 3) purchasing behaviors such as buying efficient light bulbs and appliances, as well as participation in DSM programs.

The program influences behavioral change in customers to save energy using comparative education of their energy consumption as compared to other customers. The program does this through monthly or quarterly direct-mail reports on energy consumption and tips on how to save energy, at no cost to the customer. By making customers aware of their energy consumption patterns, especially in comparison with those of the other customers, programs like this have been demonstrated to inspire customers to save energy.

The program is offered to a select group of residential customers, phased in at two levels. The initial group of customers was chosen based on their historically higher than average energy use. This group includes customers who display an annual consumption of 15,000 kilowatt hours ("kWh") or more. In Phase 1 (2011 and 2012), 25,000 customers participated. In Phase 2 (2013), participation is planned to increase to 40,000 customers. Additional participants may be added after 2014 evaluation results are analyzed.

#### Program Objectives and Rationale

The major objectives from this program are to: i) generate significant savings for DSM portfolio objectives; ii) educate and empower customers to take advantage of other DSM programs; iii) promote efficient building operations; and iv) lower energy bills for consumers.

#### Program Modifications or New Measures for 2014

TEP has adjusted savings projections from 2.5% to 2% based on 2012 results. TEP is hopeful that actual savings results will increase after a full year of reports and after the program is fully implemented.

#### Delivery and Marketing Strategy

The IC will deliver a turn-key program with responsibility for all aspects of customer selection, report generation, energy savings quantification, customer communications, and reporting.

Home Energy Reports will be mailed directly to the target market by the IC. Thus, no direct marketing is anticipated for this program. TEP will, however, jointly develop the marketing message contained in the Home Energy Reports with the IC. The program will also be included in the integrated marketing approach developed and used for all DSM programs.

#### Cost-Effectiveness

This program was found to be cost-effective using the Societal Test in TEP's 2014 EE Plan analysis. It is anticipated that the Commission will determine the program to be cost-effective in the 2012 Rate Case

## **Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan**

Order. Additional detail on lifetime energy savings, societal benefits/costs, non-incentive cost per measure for all measures is included in Exhibit 2, Section 14.

### Measurement, Evaluation, and Research Plan

The MER plan is consistent with the previously filed strategy and will include the following:

- Program Management
  - IC analyzes energy use data to determine control group and customers who will receive paper reports, tracks report delivery, and determines energy savings from bill analysis between target report group and a control group of customers.
- Annual 3<sup>rd</sup> party review
  - MER contractor collects all information from implementation contractor to verify analysis methodology and results.
  - MER contractor compares data from IC to data reported by TEP.
- Annual 3<sup>rd</sup> party impact evaluation on Home Energy Report program is provided by the MER contractor to evaluate actual energy savings from the prior year. Impact evaluation is completed using some or all of the following analysis techniques:
  - Desk review;
  - Customer/contractor questionnaires;
  - Analysis and energy simulation.
- In addition to annual impact evaluation, the MER contractor will periodically complete process evaluation on the portfolio of EE programs and will incorporate review of new measures and review of delivery tactics. The additional process evaluation includes customer satisfaction surveys.

## **B. Behavioral Comprehensive**

*TEP is requesting budget approval to continue this program with no additional modifications.*

### Program Description

The Behavioral Comprehensive program is a pending program from the 2011-2012 EE Implementation Plan. The program is anticipated to receive approval by the Commission in the 2012 Rate Case Order. EE equipment technology can only achieve a finite amount of efficiency potential. The barriers to wider spread implementation of EE are sociological, not technological. Capturing full EE potential requires influencing behavioral change. The focus for this effort is to influence behavioral change within TEP's residential customers.

The types of behaviors to be influenced include:

- Habitual behaviors
  - Adjust thermostat setting
  - Turn off unnecessary lights
- Small purchasing and maintenance behaviors
  - Purchase and install faucet aerators and low flow shower heads
  - Purchase and install CFLs
  - HVAC maintenance

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- Larger purchasing decisions
  - Purchase an ENERGY STAR appliance
  - Purchase higher EE heating and cooling system through participation in a UNS Electric DSM program

The Behavioral Comprehensive program will use five delivery mechanisms to achieve its objectives as shown in Table 6.1.

**Table 6.1 Summary of Behavioral Delivery Mechanisms**

	<b>Delivery Mechanism</b>	<b>Description</b>
1	Direct Canvassing	Door to door awareness and direct install campaign
2	K-12 Education	Classroom education including take home direct install kits
3	Community Education	“Train the trainer” approach and direct install kits
4	CFL Promotion and Outreach	CFL bulb promotion and education at outreach events
5	In-Home Energy Display	In Home Energy Displays intended to inform customers of 15 minute interval data to cause behavioral changes

### Program Objectives and Rationale

The main objective of the program is to provide customers with more information, allowing them to better understand and manage residential energy usage. Several approaches have been implemented and assessed to determine the effectiveness of making this information available. Some of the program’s major objectives include:

- Generation of significant energy savings;
- Development of relationships with TEP customers leading to other areas of participation in TEP’s portfolio of DSM programs;
- Promotion of efficient building operations; and
- Lowering customer’s energy bills.

### New Measures for 2014

No new measures are included for 2014.

### Other Information

Product information and reliability, delivery detail, and savings results from the TEP/AZ/USDOE Grant project for In-Home Energy Displays will be used to inform the implementation of a 2015 In-Home Energy Display measure. Future technology may reduce costs and increase savings for this measure.

### Delivery and Marketing Strategy

Delivery of the program is by TEP staff, except for the K-12 measure which is delivered by The Environmental Education Exchange. All TEP residential customers are eligible for this program. Delivery is offered to various groups of customers as selected by TEP and those who attend events.

### Cost-Effectiveness

All measures in this program were found to be cost-effective using the Societal Test in TEP’s 2014 EE Plan analysis. It is anticipated that the Commission will determine the program to be cost-effective in the 2012 Rate Case Order. Additional detail on lifetime energy savings, societal benefits/costs, non-incentive cost per measure for all measures is included in Exhibit 2, Section 15.

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### Measurement, Evaluation, and Research Plan

The MER plan will include the following:

- Program Management
  - Utility staff manages kit measure selection and availability.
  - Utility staff tracks events and distribution of energy saving kits or CFLs.
  - IC manages K-12 education kit distribution and reports distribution to TEP.
  - Utility program manager collects all data and verifies cost with invoices.
- 3<sup>rd</sup> party review
  - MER contractor collects all data from utility and IC for comparison.
- Annual 3<sup>rd</sup> party impact evaluation is provided by MER contractor on the Behavioral Comprehensive program to evaluate actual energy savings from the prior year. Impact evaluation is completed using some or all of the following analysis techniques:
  - Desk review;
  - Customer/contractor questionnaires; and
  - Analysis and energy simulation.
- Cost research is provided by the MER contractor on various measures within the educational kits to maintain up-to-date information on measure incremental costs.
- Research as necessary on various measures within educational kits to evaluate changes in baseline conditions due to new codes and standards.
- In addition to annual impact evaluation, the MER contractor will periodically complete process evaluation on the portfolio of EE programs and will incorporate review of new measures and review of delivery tactics. The additional process evaluation includes customer satisfaction surveys.

## VII. Support Programs

Support programs are designed to provide technical and financial support for the effective implementation of other DSM programs.

### A. Consumer Education and Outreach

*TEP is requesting budget approval to continue this program with no additional modifications.*

#### Program Description

The Consumer Education and Outreach (“CEO”) program is an existing program, approved previously by the Commission in Decision No. 70402 (July 3, 2008). The program is anticipated to receive approval by the Commission in the pending 2012 Rate Case Order. The CEO program is intended to increase participation in the Company’s other DSM/EE programs, but is also intended to effect a broader market transformation, including changes in customer’s behavior. The program includes two basic educational components:

- General EE advertising component will cover seasonal ads that encourage energy savings through energy saving tips, marketing the on-line energy audit, and marketing other EE programs to customers.
- Time-of-Use (“TOU”) education to teach residential and small commercial customers about the benefits of TOU rates and enable customers to maximize savings through load shifting.

#### Program Objectives and Rationale

The program consists of education and marketing material to inform customers about the benefits of energy conservation and how to achieve energy savings.

#### New Measures for 2014

There are no individual measures within the CEO program.

#### Delivery and Marketing Strategy

There are no significant changes in implementation approach or delivery strategy for the items in this program.

#### Cost-Effectiveness

This is an educational and marketing program that does not contain specific EE measures and does not produce direct energy savings. Therefore, this program cannot be evaluated for specific cost-effectiveness. The cost to deliver this program is added to the total EE portfolio costs and becomes part of the cost-effectiveness evaluation of the EE portfolio as a whole.

#### Measurement, Evaluation, and Research Plan

The MER plan will include the following:

- Program Management
  - Utility staff maintains records of EE education messaging from radio, print, bill-stuffers, and social media.
  - Utility staff oversees development of customer questionnaires or surveys and maintains results from activities.

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### **C. Residential Energy Financing Pilot Program**

***TEP is requesting budget approval to continue this program with no additional modifications.***

#### **Program Description**

The Residential Energy Financing pilot program is a pending program from the 2011-2012 EE Implementation Plan. The program is anticipated to receive approval by the Commission in the 2012 Rate Case Order. The program offers home improvement loans to TEP customers seeking to finance home EE improvements promoted through the Existing Homes and Audit Direct Install program. The program is primarily delivered through participating contractors who receive training and support from TEP and the program lender (Vantage West Credit Union).

#### **Program Objectives and Rationale**

The program's objective is to offer low interest, unsecured loans for up to \$10,000. The program is designed to provide customers with the capital needed to make cost-effective EE upgrades to their homes and expand the pool of customers that can afford to participate in utility EE programs.

#### **New Measures for 2014**

There are no individual measures within the Residential Financing program.

#### **Delivery and Marketing Strategy**

A utility program manager coordinates the fund transfers and provides overall management, marketing oversight, tracking of participants, and contractor participation. Marketing is primarily delivered by participating contractors who receive training and support from TEP and Vantage West Credit Union. Direct program marketing also occurs through the TEP and Vantage West Credit Union websites, and through distribution of one or more of the following: program promotional flyers, bill inserts, and group email notifications. Additional methods of program outreach and marketing will be refined after the program's launch during the 2013 program year.

#### **Measurement, Evaluation, and Research Plan**

The MER plan will include the following:

- Program Management
  - Lending institute will collect necessary data through the application process.
  - Lending institute will qualify customers for loans and distribute money to installing contractors.
  - Lending institute will validate measure cost with invoices.
  - Lending institute will manage all data tracking and provide reports to TEP.
  - TEP utility staff will conduct 100% post inspection and verification of installation.
  - Installing contractors are required to meet certain qualifications to participate.
- 3<sup>rd</sup> party review
  - MER contractor will verify all information from the lender.
  - MER contractor will verify accuracy of TEP's data.
- Annual 3<sup>rd</sup> party impact evaluation on the Residential Energy Financing program will be conducted by the MER contractor to verify actual energy savings from the prior year. Impact evaluation is completed using some or all of the following analysis techniques:
  - Desk review;
  - Customer/contractor questionnaires;
  - Analysis and energy simulation; and
  - On-site inspections.

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- In addition to annual impact evaluation, the MER contractor will periodically complete process evaluation on the portfolio of EE programs and will incorporate review of new measures and review of delivery tactics. The additional process evaluation includes customer satisfaction surveys.

### **C. Energy Codes and Standards Enhancement Program**

*TEP is requesting budget approval to continue this program with additional modifications.*

#### Program Description

Energy Codes and Standards Enhancement Program ("ECSEP") is a pending program from the 2011-2012 EE Implementation Plan. The program is anticipated to receive approval in the 2012 Rate Case Order. Utilities are allowed to claim an energy savings credit for building codes through R14-2-2404(E) of the EE Rule. TEP is requesting two modifications to this program:

1. A waiver from A.A.C. R14-2-2404(E) to allow TEP to count energy savings-resulting from EE appliance standards, as was approved for UNS Electric (Decision No. 72747, January 20, 2012) and APS.
2. A waiver from A.A.C. R14-2-2404(E) to allow TEP to count toward meeting the EE Standard 100% of the energy savings resulting from updates in EE building codes and EE appliance standards.

The ECSEP will strive to maximize energy savings through adherence to local building energy codes and through enhanced EE appliance standards. The program will employ a variety of tactics aimed at: i) improving levels of compliance with existing building energy codes and appliance standards; and ii) supporting periodic updates to energy codes and appliance standards as warranted by market conditions. Specific program activities will depend on the needs of the local code officials. The program will include:

- Education of local code officials and building professionals on existing standards;
- Providing documentation of the specific local benefits of code enforcement, which can promote energy code changes over time;
- Ensuring utility incentive programs align with local energy codes and appliance standards;
- Collaboration with relevant stakeholders to build a more robust community, with the goal of advancing strong, effective building energy codes and appliance standards across the local jurisdictions within TEP's service territory;
- Advocating for energy code and appliance standards updates over time; and
- Participation in the legislative process to gain approval for new code adoption.

#### New Measures or Program Modifications for 2014

There are no individual measures within the ECSEP. Each year the individual categories that provide an energy saving credit will change depending on updates to appliance standards and/or building codes. TEP's process for estimating savings from building codes and equipment standards are included Attachment A. Additional detail on lifetime energy savings, societal benefits/costs, non-incentive cost per measure for all measures is included in Exhibit 2, Section 16.

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### Program Objectives and Rationale

Increase energy savings in new construction and renovated buildings, in both the residential and commercial sectors through improving levels of compliance with existing building energy codes, supporting periodic energy code updates as warranted by market conditions, and advocating for higher efficiency electric appliances. TEP will request the 3<sup>rd</sup> party evaluation contractor use the same process to verify savings. Table 7.1 provides information about equipment standards and building codes that are used in the TEP analysis.

**Table 7.1 2014 Energy Credit Summary**

Measure	Old Code	New Code	Authority	Effective Year
General Service Lamps (Incandescents, CFLs, LEDs)	None	EISA <sup>5</sup>	Federal	2012
T12-T8 Linear fluorescents	EPACT 1992	EISA <sup>6</sup>	Federal	2012
Motors	EPACT 1992	EISA	Federal	2010
Residential New Construction	IECC 2003, 2006, 2009 (by jurisdiction)	IECC 2006, 2009, 2012 (by jurisdiction)	Jurisdictional	Various

### Delivery and Marketing Strategy

Program activities will be selected based on previously effective approaches used in other jurisdictions, as well as feedback from local code officials, and municipal leaders in locations that currently lack building codes. Once program activities are selected, program staff will maintain a consistent level of activity and engagement with relevant stakeholders. Activities might include: participation in energy code adoption committees, technical support (calculations, research, information) for code adoption committees, public testimony in support of code adoption before city councils, participation in organizations that promote increased appliance standards for EE (such as the Consortium for Energy Efficiency (“CEE”)), ensuring that ongoing DSM programs align well with energy code requirements and appliance standards, funding for local agencies to enforce and improve energy codes and appliance standards over time, and participation in the legislative process to gain approval for new code adoption.

Marketing strategy includes website promotion, direct outreach to local code officials and networks of municipal leaders who are members of committees conducting activities related to building code enhancement, and communications with other TEP EE program implementation staff.

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<sup>5</sup> Appliance Standards Awareness Project. General Service Lamps. <http://www.appliance-standards.org/node/6810>

<sup>6</sup> Energy Independence and Security Act of 2007. Public Law 110-140, 110<sup>th</sup> Congress.  
<http://www.gpo.gov/fdsys/pkg/PLAW-110publ140/html/PLAW-110publ140.htm>

## Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan

### Cost-Effectiveness

Table 7.2 provides a summary of the energy saving credits TEP will claim for 2014.

**Table 7.2 Program Benefits**

Program Measures	Base Efficiency	High Efficiency	Avg. Incentive	2014 Energy Credit (100%)	Societal Test
General Service Lamps (Incandescents, CFLs, LEDs)	None	EISA <sup>7</sup>	\$0	24,460,884	5.7
T12-T8 Linear fluorescents	EPACT 1992	EISA <sup>8</sup>	\$0	3,762,867	5.7
Motors	EPACT 1992	EISA	\$0	1,442,676	5.7
Residential New Construction	IECC 2003, 2006, 2009 (by jurisdiction)	IECC 2006, 2009, 2012 (by jurisdiction)	\$0	2,962,233	5.7

Table 7.3 below provides a summary of program costs.

**Table 7.3 Program Costs**

Year	Incentives	Program Delivery	Program Marketing	Utility Administration	Evaluation	Total Program Cost	Program Cost per Lifetime kWh Saved (\$/kWh)	Program Cost per First Year kWh Saved (\$/kWh)
2014	\$0	\$259,318	\$0	\$12,489	\$52,901	\$324,707	\$0.01	\$0.01

### Measurement, Evaluation, and Research Plan

In an effort to provide a consistent strategy for calculating the energy savings credit from building codes and equipment standards, TEP participated in discussions with Navigant Consulting, APS, UNS Electric, and UNS Gas to determine a state-wide framework for evaluation of codes and standards. The process described in Attachment A will be used to determine appropriate savings from updates to codes and standards for TEP and will be verified by 3rd Party evaluation.

<sup>7</sup> Appliance Standards Awareness Project. General Service Lamps. <http://www.appliance-standards.org/node/6810>

<sup>8</sup> Energy Independence and Security Act of 2007. Public Law 110-140, 110<sup>th</sup> Congress. <http://www.gpo.gov/fdsys/pkg/PLAW-110publ140/html/PLAW-110publ140.htm>

## VIII. Utility Improvement Programs

TEP proposes two Utility Improvement programs to count toward meeting savings requirement of the EE Standard. These programs provide efficiency improvements to TEP's facilities, generation, and delivery systems. The improvements result in measurable EE savings that are real and sometimes more valuable than any savings the Company can achieve with customer funded EE incentives. The savings from these programs are important to TEP customers because they reduce TEP's cost of service and ultimately help TEP achieve the EE savings goal at a lower cost to all customers.

TEP is requesting a waiver from A.A.C. RI4-2-2404(H) to allow TEP to count energy savings from improvements in its utility delivery system toward meeting the cumulative energy savings goals. The policy to allow system improvement savings to be counted toward meeting EE goals has been accepted and adopted in other states including; Washington, Iowa, Ohio, Florida, Virginia, Delaware, Pennsylvania, Maryland and South Carolina.

**The following section presents a summary of TEP's utility improvement programs.**

### **A. Conservation Voltage Reduction**

***TEP is requesting budget approval to add this new program to the TEP EE Portfolio.***

#### Program Description

The Conservation Voltage Reduction ("CVR") program achieves load reductions through changes in voltage regulation parameters at the substation/feeder level<sup>9</sup>. This change involves a physical adjustment in transformer settings governing voltage at the substation. By adjusting substation voltage, the program impacts energy flows and capacity, including demand coincident with the system peak period(s).

#### New Measures for 2014

There are no individual measures within the Conservation Voltage Reduction program.

#### Program Objectives and Rationale

Changes in voltage translate into demand and energy savings through the basic physical relationships governing power: Watts = Volts X Amps. For this program, reducing the voltage reduces demand and reduces consumption. The change in voltage targeted by this program is approximately 2 percent which will fall within the tolerance bandwidth required to ensure power quality and equipment performance by end-use customers. In most instances, customers will not notice, nor experience, any negative changes in equipment performance (e.g., air-conditioning, lighting and motor performance and use), resulting from the change in voltage. TEP's process for estimating savings from CVR and a full program description are included Attachment B. Additional detail on lifetime energy savings, societal benefits/costs, non-incentive cost per measure for all measures is included in Exhibit 2, Section 17.

#### Target Market

The CVR program incorporates voltage regulation techniques on selected circuits which includes both residential and non-residential customers. TEP performed a review of its distribution system and selected a substation for the initial program with 4 feeders that are relatively short so as to minimize risk of lowering voltage at the end of the line to unacceptable levels.

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<sup>9</sup> Schneider, et al. "Evaluation of Conservation Voltage Reduction (CVR) on a National Level." Pacific Northwest National Laboratory. July 2010.

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### Program Eligibility

All customers are eligible for this program with no out-of-pocket expense.

### Delivery and Marketing Strategy

The program will be implemented by TEP transmission and distribution engineers and contractors at selected substations and circuits. Program monitoring including investigation and resolution of any voltage issues will be performed during implementation. There are no customer costs, incentives or marketing activities for this program as customer participation is not solicited.

TEP staff will be responsible for administering the program. Staff responsibilities include coordination, planning, and implementation of all program activities. MER activities will be conducted by a third-party contractor.

### Cost-Effectiveness

Table 8.1 below provides a summary of program benefits and Table 8.2 provides a summary of program costs.

**Table 8.1 Program Benefits**

Program Measures	Base Efficiency	High Efficiency	Avg. Incentive	Estimated Savings (kWh)	Societal Test
DREX 34	No Regulation	With Regulation	\$0	634,687	4.3
DREX 35	No Regulation	With Regulation	\$0	365,473	2.5
DREX 36	No Regulation	With Regulation	\$0	665,899	4.5
DREX 44	No Regulation	With Regulation	\$0	637,371	4.3

**Table 8.2 Program Costs**

Year	Incentives	Program Delivery	Program Marketing	Utility Administration	Evaluation	Total Program Cost	Program Cost per Lifetime kWh Saved (\$/kWh)	Program Cost per First Year kWh Saved (\$/kWh)
2014	\$0	\$373,482	\$0	\$15,746	\$20,168	\$409,396	\$0.01	\$0.16

### Measurement, Evaluation, and Research Plan

MER activities relating to the CVR program will focus on verification of planning assumptions through analysis of energy and demand data for the chosen circuit(s) for one year pre-program compared to data gathered during the first year of the program and normalized for weather. A full description of the MER activities is provided in Attachment B. Additional detail on lifetime energy savings, societal benefits/costs, non-incentive cost per measure for all measures is included in Exhibit 2, Section 18.

## **B. Generation Improvement and Facilities Upgrade**

*TEP is requesting budget approval to add this new program to the TEP EE Portfolio.*

### Program Description

The Generation Improvement and Facilities Upgrade is a new program for 2014. The EE Rules currently allow TEP to include energy savings from generation improvements or facilities upgrades toward meeting the EE goal. Unlike standard EE measures, the benefits of generation improvement and facilities upgrade are not paid for through the DSM surcharge ("DSMS") and do not result in unrecovered fixed costs. TEP will include only the administrative costs to prepare, report, and validate savings as an EE/DSM expense.

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Generation system improvements include, but are not limited to, the installation of high efficiency motors and variable speed drives, and projects that reduce a power plant's auxiliary power or increase capacity. Facilities upgrades include the installation of EE lighting, and HVAC upgrades at TEP offices and facilities. These initiatives provide significant energy savings and do not require customer actions taken on the customer side of the meter.

### New Measures for 2014

There are no individual measures within the Generation Improvement and Facilities Upgrade program

### Delivery and Marketing Strategy

TEP plans to count toward meeting the EE standard in 2014 quantified savings from generation system improvement and upgrades to facilities. Each project will be screened separately for cost-effectiveness using the Societal Test. Detailed information including cost-effectiveness results will be filed in the end of year DSM progress report.

### Measurement, Evaluation, and Research Plan

TEP will provide to the MER contractor copies of detailed cost-effectiveness calculations as well as copies of records providing evidence that equipment has been purchased and installed to enable the 3<sup>rd</sup> party evaluator information necessary to verify savings.

## **IX. Demand Response Programs**

### **A. C&I Direct Load Control**

*TEP is requesting budget approval to continue this program with no additional modifications.*

#### Program Description

The C&I Direct Load Control program is an existing program, approved previously by the Commission in Decision No. 71787 (July 12, 2010). The program is anticipated to receive approval by the Commission in the pending 2012 Rate Case Order. This is a C&I load curtailment program. Customers are compensated with incentives for their participation at negotiated levels depending on multiple factors, including the size of the facility, amount of kW under load control, and the frequency with which the resource can be utilized.

#### Program Objectives and Rationale

C&I load represents up to 14 percent of the system's demand during peak hours in the late afternoon and evening hours during summer months. Modification to controls for chillers, rooftop AC units, lighting, fans, and other end-uses can reduce power demand at peak times or during emergency situations. In addition, the program may be used to support standard benefits of demand-response programs, which include: i) avoided firm capacity required to meet reserve requirements; ii) reduced or avoided open-market power purchases during periods of high energy prices; iii) and greater grid stability and reduction in outages due to reduced grid demand.

#### New Measures for 2014

No new measures are included for 2014.

#### Delivery and Marketing Strategy

The program is delivered on a turn-key basis by a third-party IC, who negotiates load reduction agreements with multiple customers. The IC then aggregates these customers to provide TEP with a confirmed and guaranteed load reduction capacity, while maintaining a degree of flexibility in how the curtailments are achieved. Since the demand response aggregator is obligated to provide the required megawatts of load curtailment, the process is similar to a power purchase agreement. Recruitment is targeted to help ensure that customers invited to participate are able to provide reliable and significant load control reductions.

#### Cost-Effectiveness

The Commission determined the program to be cost-effective in Decision No. 71787. Cost effectiveness for demand response programs are not determined year by year but by the program life as a whole.

#### Measurement Evaluation and Research

The MER plan is consistent with the previously filed strategy and will include the following:

- Program Management
  - Implementation contractor solicits customer participation and collects necessary information on equipment, load, and reduction possibilities.
  - Implementation contractor tracks and verifies load reduction during an event and provides detailed information to TEP.
- 3<sup>rd</sup> party review
  - MER contractor provides certification of implementation contractor's data.

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- 3<sup>rd</sup> party impact evaluation is provided by the MER contractor on the C&I Direct Load Control program to evaluate actual energy savings from the prior year. Impact evaluation is completed using some or all of the following analysis techniques:
  - Desk review;
  - Customer/contractor questionnaires;
  - Analysis and energy simulation;
  - On-site inspections; and
  - Metering.
- In addition to annual impact evaluation, the MER plan will periodically complete process evaluation on the portfolio of EE programs and will incorporate review of new measures and review of delivery tactics. The additional process evaluation includes customer satisfaction surveys, equipment installation verification, etc.

### **B. Residential and Small Commercial Direct Load Control**

***TEP is not requesting budget approval to continue this program in 2014.***

As reported in its Annual DSM Progress Report for 2012 (Docket No. E-00000U-13-0031) TEP has completed its pilot program for Residential and Small Commercial Direct Load Control ("DLC"). TEP has decided not to offer a mass market DLC program and is not requesting any budget approval in this EE Plan. TEP does not need this technology at this time to ensure safe and reliable service, and its contribution to the EE Standard is better met through TEP's C&I Direct Load Control program.

## **X. Portfolio Management**

TEP will serve as the program administrator for the EE Portfolio. To expedite the launch of programs, and to utilize the experiences of other jurisdictions, TEP implements programs through a combination of third-party ICs and utility staff. TEP designs programs to be the most cost-effective by utilizing ICs that provide the lowest cost per kWh and, likewise, utilizing TEP staff when their use provides the lowest cost per kWh. ICs will be selected through a competitive request for proposal process for delivery of programs.

TEP provides high-level administrative, contract management, program design and marketing oversight of the selected ICs. A portfolio of this size and scope requires careful management oversight. TEP has a dedicated group of EE program staff to oversee third-party implemented programs and promotion of cross-sector education and awareness activities.

TEP also is developing a comprehensive tracking database to ensure accurate and comprehensive recording of all program participation. Additionally, the database will allow TEP to research and track participation by customer class and geographic area, and also to identify trends and untapped opportunities to further the program's goals. TEP staff takes primary responsibility for general EE education and awareness strategies and activities, including maintaining the Company's website, utilizing online energy audit software, and distributing mass-market general education and efficiency awareness promotions.

In summary, TEP provides comprehensive program contract oversight, strategic planning, including management, financial planning and budgeting, as well as:

- High-level guidance and direction to the ICs, including review and revision of proposed annual implementation plans and proposed milestones. The Company will additionally engage with the contractor team on a daily basis when working through strategy and policy issues;
- Review and approval of IC invoices and ensure program activities are within budget and on schedule;
- Review of IC operational databases for accuracy, ensuring incorporation of data into TEP's comprehensive portfolio tracking database to be used for overall tracking and regulatory reporting;
- Review of measure saving estimates maintained by the IC;
- Oversight and coordination of evaluation, measurement, and verification of ICs;
- Public education and outreach to community groups, trade allies, and trade associations;
- Provide guidance and direction on new initiatives or strategies proposed by the ICs;
- Communicate to ICs the other TEP initiatives that may provide opportunities for cross-program promotion;
- Review and approve printed materials and advertising plans from ICs;
- Create and provide collateral material for advertising on programs delivered by the utility;
- Evaluate portfolio and program effectiveness, and recommend modifications to programs and approach as needed; and
- Perform periodic review of program metrics, conduct investment analysis, and review evolving program design.

## **Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan**

### **A. Marketing and Outreach Strategy**

The marketing and outreach strategy for the portfolio of programs encourages participation among customers, key market players, and trade allies. The objective of the marketing and communications strategy is to make customers and key market actors aware of the Company's program offerings and the benefits of such offerings, and to influence their decision to use more EE options when purchasing or installing energy systems or equipment.

The specifics of the marketing strategy depend on the program and the demographics of the group being engaged. Depending on the market to be reached, marketing will generally include a mix of broadcast, Internet, print media, radio, direct contact, direct mail, bill inserts, or presentations. The program descriptions describe the proposed marketing approach for each program.

Additionally, TEP works with regional, state, and national programs and partners to optimize cooperative marketing programs and campaigns. Marketing efforts are designed to dovetail with other statewide or regional efficiency programs and campaigns, including those offered by APS.

### **B. Tracking and Reporting**

TEP continues to develop a comprehensive internal tracking and reporting system to record all activities from the portfolio of programs. ICs will be responsible for tracking and reporting EE program activities by entering details of each project into the comprehensive data tracking system. The system will allow customized reporting to meet any reporting requirements in a quick, transparent, and accurate manner.

### **C. Midstream Adjustments**

While the 2014 EE Plan presents detailed information on approach, EE measures and proposed incentive levels, unforeseen changes in the market condition, may require regular review and revisions of portions of this plan to reflect this new information. As such, adjustments to these programs may be necessary. When this is the case, the Company will update the Commission in a timely manner and give the Commission opportunity to provide input.

### **D. Inter-Utility Coordination**

TEP works with Southwest Gas and other utilities to maximize the effectiveness of the programs; in particular, where gas and electric services overlap, regular communication and coordination will be necessary. This collaboration involves working together to identify savings opportunities, as well as providing consistent messaging and parallel programs to reduce confusion and difficulty for customers and trade allies. TEP intends to continue collaboration with others to provide cohesive marketing messages, as well as designing incentive programs, incentive forms and incentive levels that are easily transferable with adjacent utilities.

### **E. Leveraging Other Efficiency Initiatives**

Within Arizona, several entities and initiatives are promoting EE including: the state government; Southwest Energy Efficiency Project ("SWEEP"); U.S. Environmental Protection Agency and U.S. Department of Energy's "ENERGY STAR®" brand; and Federal tax credits. TEP and its implementation contractors work diligently to remain aware and up to date, and to cooperate with efficiency efforts being directed at Arizona energy users. Wherever feasible, co-marketing efforts are employed to send a clear and consistent message on the benefits of EE and the resources available to help achieve it. Additionally, TEP utilizes the successful experiences in other states by joining CEE and E-Source, which provides TEP program managers with information and contacts to assist in the continuous program design and delivery improvements of the portfolio.

## **Tucson Electric Power Co. 2014 Energy Efficiency Implementation Plan**

### **F. Trade Ally Coordination**

Trade allies are essential to the effective implementation of any EE program. Trade allies are considered program partners and are regularly informed of the TEP program's progress. Open communication from trade allies about what is working and what is not in the field is essential. To ensure good two-way communication, the Company emphasizes coordination, listening sessions, and frequent communications. A schedule of meetings, workshops, educational seminars, program update breakfasts, and clear and concise program descriptions are distributed to the trade allies at the program kick off meetings. Ongoing training and program updates are also a key part of program delivery.

## **XI. DSMS Tariff**

Because TEP anticipates a DSM Surcharge (“DSMS”) reset with Commission approval of the pending 2012 Rate Case Order TEP is not filing a request for a change to its DSMS surcharge as part of this EE Plan. If the EERP is not approved, TEP will file a separate DSMS request on or before March 1, 2014, to recover costs associated with this EE Plan.

## Attachment A

### Methodology for Determination of Energy Savings Credit

#### From Building Codes and Appliance Standards

In an effort to provide a consistent strategy for calculating the energy savings credit from building codes and equipment standards, TEP participated in discussions with Navigant Consulting, APS, UNS Electric and UNS Gas to determine a state-wide framework for evaluation of energy savings from codes and standards. The process described below will be used to determine appropriate savings from the Energy Codes and Standards Enhancement Program ("ECSEP") for TEP and will be verified by 3<sup>rd</sup> Party Measure, Evaluation, and Research ("MER") contractor.

#### Determine Relevant Codes and Standards Updates

A review of federal, state, and jurisdictional code changes in 2012 revealed the following code updates, which are of interest to TEP:

Table 1: Relevant Code Updates in TEP Territory

Measure	Old Code	New Code	Authority	Effective Year
General Service Lamps (Incandescent, CFLs, LEDs)	None	EISA <sup>1</sup>	Federal	2012
Linear fluorescents	EPACT 1992	EISA <sup>2</sup>	Federal	2012
Motors	EPACT 1992	EISA	Federal	2010
Residential New Construction	IECC <sup>3</sup> 2003, 2006, 2009 (by jurisdiction)	IECC 2006, 2009, 2012 (by jurisdiction)	Jurisdictional	Various

Table 2 below provides a quick review of definitions related to determining ECSEP savings estimates.

Table 2: Review of Definitions for Estimating ECSEP Savings

ECSEP Evaluation Step	Definition
Potential Energy Savings	The unit energy savings (difference between pre- and post-code unit consumption) multiplied by the total number of units installed in TEP territory, scaled from state or national sales data using electricity sales data.
Gross Energy Savings	Potential savings from the standard adjusted for a rate of code compliance.
Net Energy Savings	Gross savings from the standard adjusted for the rate of naturally occurring market adoption of the efficient measure.
Net ECSEP Energy Savings	Net energy savings attributable to TEP's ECSEP (33% of net energy savings per A.A.C. R14-2-2404.E).
Net ECSEP Demand Savings	Net demand savings from ECSEP, adjusted from ECSEP energy savings according to the appropriate coincidence factors

<sup>1</sup> Appliance Standards Awareness Project. General Service Lamps. <http://www.appliance-standards.org/node/6810>

<sup>2</sup> Energy Independence and Security Act of 2007. Public Law 110-140, 110<sup>th</sup> Congress.  
<http://www.gpo.gov/fdsys/pkg/PLAW-110publ140/html/PLAW-110publ140.htm>

<sup>3</sup> International Energy Conservation Code ("IECC")

### Determine Allocation for TEP by Electricity Sales Data

For all measures, TEP will use the same methodology to allocate savings from the state or national level to the utility level. Savings were allocated by electricity sales in the relevant sector according to the following table<sup>4</sup>:

**Table 3: Allocation Factors for TEP**

	TEP Electricity Sales in 2011			
	Residential	Commercial	Industrial	Total
MWh	3,888,012	2,215,863	3,228,234	9,332,109
TEP (% of national)	0.27%	0.17%	0.33%	0.25%
TEP (% of state)	11.75%	7.51%	26.13%	12.45%

For example, with assistance from Navigant, TEP obtained national-level sales data for linear fluorescents. Assuming that 80% of linear fluorescents are deployed in commercial settings and 20% are deployed in residential settings, 8.36% of overall statewide savings from the Energy Independence and Security Act ("EISA") standard occurred within TEP's service territory.

Finally, for all analyses, ECSEP savings estimates were adjusted by incentive program savings, to ensure that incentive program savings are not double counted in ECSEP savings estimates.

#### Measure 1: General Service Lamps

**Table 4: EISA Standard Savings from General Service Lamps**

ECSEP Evaluation Step	General Service Lamp Savings		
	2012	2013	2014
Potential Energy Savings (kWh)	n/a	n/a	n/a
Gross Energy Savings (kWh)	n/a	n/a	n/a
Net Energy Savings (kWh) <sup>5</sup>	4,748,471	12,559,155	24,460,885
Net ECSEP Energy Savings (kWh) <sup>6</sup>	1,582,824	4,186,385	8,153,628
Net ECSEP Demand Savings (kW)	55	146	285

Table 4 describes savings from the general service lamp EISA standard implemented in 2012. Potential energy savings and net energy savings were not estimated in this case, because the unit energy savings

<sup>4</sup> Energy Information Administration (EIA) electricity data. <http://www.eia.gov/electricity/data.cfm>

<sup>5</sup> These savings will be credited toward the Energy Efficiency ("EE") Standard if the Commission approves TEP's request to count 100% of savings.

<sup>6</sup> These savings will be credited toward the EE Standard if the Commission does not approve TEP's request to count 100% of savings.

estimates were derived from an Environmental Protection Agency (“EPA”) report on next-generation lighting<sup>7</sup>, which already included compliance and natural market adoption adjustments within their analysis. For the purposes of allocation, it was assumed that 90% of general service lamps are used in residential buildings, while 10% are used in commercial buildings. The expected useful life of each lamp was assumed to be two years.

#### Measure 2: Linear Fluorescent Lamps

**Table 5: EISA Standard Savings from Linear Fluorescents**

ECSEP Evaluation Step	Linear Fluorescent Lamp Savings		
	2012	2013	2014
Potential Energy Savings (kWh)	4,925,527	4,520,223	4,148,270
Gross Energy Savings (kWh)	n/a	n/a	n/a
Net Energy Savings (kWh) <sup>8</sup>	1,180,013	3,427,079	3,762,867
Net ECSEP Energy Savings (kWh) <sup>9</sup>	393,338	1,142,360	1,254,289
Net ECSEP Demand Savings (kW)	25	73	80

Table 5 describes savings from the general service lamp EISA standard implemented in 2012. Gross energy savings were not estimated in this case, because the sales forecast data from the National Electric Manufacturers Association already accounted for natural market adoption rates. For the purposes of allocation, it was assumed that 80% of the linear fluorescent lamps are used in commercial buildings, while 20% are used in the residential sector. The expected useful life of each lamp was assumed to be 15 years.

<sup>7</sup> US EPA, 2012, *Next Generation Lighting Programs: Opportunities to Advance Efficient Lighting for a Cleaner Environment*

<sup>8</sup> These savings will be credited toward the EE Standard if the Commission approves TEP’s request to count 100% of savings.

<sup>9</sup> These savings will be credited toward the EE Standard if the Commission does not approve TEP’s request to count 100% of savings.

### Measure 3: Motors

**Table 6. EISA Standard Savings from Motors**

ECSEP Evaluation Step	Electric Motor Savings			
	2011	2012	2013	2014
Potential Energy Savings (kWh)	1,555,964	1,598,790	1,576,004	1,563,887
Gross Energy Savings (kWh)	991,120	1,122,081	1,282,378	1,442,675
Net Energy Savings (kWh) <sup>10</sup>	991,120	1,122,081	1,282,378	1,442,675
Net ECSEP Energy Savings (kWh) <sup>11</sup>	330,373	374,027	427,459	480,892
Net ECSEP Demand Savings (kW)	74	84	96	108

Table 6 describes savings from the electric motors EISA standard implemented in 2010. For the purposes of allocation, it was assumed that 72% of motors are used in commercial buildings, while 28% are used in industrial buildings. Gross energy savings are equivalent to net energy savings due to lack of information on natural rates of market adoption for efficient motors absent the EISA standard. The expected useful life of each motor was assumed to be 15 years.

### Measure 4: Residential New Construction (building codes)

**Table 7: Residential New Construction IECC 2012 Code Savings**

ECSEP Evaluation Step	Residential New Construction Savings			
	2012	2013	2014	2015
Code House Consumption (kWh/home)	14,464	13,615	12,363	11,961
Savings year over year (kWh/home)	n/a	849	1,251	402
Number of homes	2,162	2,162	2,162	2,162
Potential Energy Savings (kWh)	n/a	2,543,447	2,867,022	n/a
Net Energy Savings (kWh) <sup>12</sup>	n/a	1,836,098	2,705,235	869,137
Net ECSEP Savings (kWh) <sup>13</sup>	n/a	670,176	987,411	317,235
Net ECSEP Demand Savings (kW)	n/a	489	720	231

<sup>10</sup> These savings will be credited toward the EE Standard if the Commission approves TEP's request to count 100% of savings.

<sup>11</sup> These savings will be credited toward the EE Standard if the Commission does not approve TEP's request to count 100% of savings.

<sup>12</sup> These savings will be credited toward the EE Standard if the Commission approves TEP's request to count 100% of savings.

<sup>13</sup> These savings will be credited toward the EE Standard if the Commission does not approve TEP's request to count 100% of savings.

Estimating savings from building codes required a different data collection strategy, as any single building code encompasses a wide array of measures, all with different market characteristics. For example, the residential International Energy Conservation Code (“IECC”) 2012 code prescribes minimum standards for attic insulation, HVAC efficiency, and lighting fixtures—all of which are sold in different markets. Code savings estimates are further complicated in home-rule states such as Arizona, where each jurisdiction has the authority to establish and amend building codes, and jurisdictional boundaries do not necessarily correspond to utility service areas. In this case, pre- and post- code implementation energy consumption values were established on a jurisdiction-by-jurisdiction basis. Each jurisdiction within TEP service territory was weighted according to the number of new residential building permits issued in 2012.

Navigant Consulting built energy simulation models of typical code compliant buildings constructed within TEP territory that complied with 2006 or 2012 IECC regulations. The unit energy savings were derived by comparing the energy use difference between modeled code compliant homes of each code vintage in each jurisdiction planning a code update. This number was multiplied by the quantity of new building permits issued in 2012 as a proxy for the size of the housing market from 2013-2015 to derive a gross code savings estimate. Homes were assumed to be 50% code compliant one year after implementation of the new code, and fully code compliant two years after new code implementation. Finally, confining the analysis to residential building permits issued only within TEP service territory obviates the need to make assumptions for allocation of savings to TEP.

## **Attachment B**

### **Conservation Voltage Reduction Program**

#### Program Description

The Conservation Voltage Reduction (“CVR”) program achieves load reductions through changes in voltage regulation parameters at the substation/feeder level<sup>1</sup>. This change involves a physical adjustment in transformer settings governing voltage at the substation. By adjusting substation voltage, the program impacts energy flows and capacity, including demand coincident with the system peak period(s).

#### Program Objectives and Rationale

Changes in voltage translate into demand and energy savings through the basic physical relationships governing power: Watts = Volts x Amps. For this program, reducing the voltage reduces demand and reduces consumption. Studies indicate that energy consumption is reduced by 1-4% (2% ACEEE, NEEA 2007<sup>2</sup>) on applicable circuits depending on reduction in voltage and several other factors, including load mix. These estimates are based on actual utility distribution efficiency studies and field measurement and verification (“M&V”) testing performed in the Northwest Region. The change in voltage targeted by this program is approximately 2% , which will fall within the tolerance bandwidths required to ensure power quality and equipment performance by end-use customers. In most instances, customers will neither notice nor experience, any negative changes in equipment performance (e.g., air-conditioning, lighting and motor performance, and use), resulting from the change in voltage.

In the unlikely event that power quality and equipment performance is impacted under the program, TEP will immediately make adjustments consisting of equipment changes or enhancements (e.g., adding capacitors to feeders), and/or dialing voltage settings back to their pretreatment level(s). Therefore, part of the role of the CVR program will be to assess these potential impacts and how TEP can:

1. Identify adverse outcomes resulting from the program vs. voltage complaints not associated to CVR; and
2. Implement a remediation plan to restore electric service and power quality to prior levels.

The objective of the CVR program is to decrease energy use through optimizing system voltage on select circuits. The CVR program involves a static (permanent) voltage reduction of approximately 2% across a select portion of the TEP electrical distribution system.

The rationale for the CVR program derives from the fact that system voltages are not all optimized for efficiency. The voltage standard in the United States for single-phase power at a residential customer meter allows for a range from 126V to 114V (ANSI C84.1, 1996). Voltages higher or lower than that have the potential to damage customer equipment. The amp draw of certain electric devices is proportional to the voltage used to energize the device. These devices are called constant impedance or partial constant impedance loads. When the overall voltage on a distribution system is reduced, the current (and associated demand) of all constant impedance and partial constant impedance loads will decrease. Reduction in demand by reducing applied voltage results in reduced energy consumption.

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<sup>1</sup> Schneider, et al. “Evaluation of Conservation Voltage Reduction (CVR) on a National Level.” Pacific Northwest National Laboratory. July 2010.

<sup>2</sup> Beck RW. 2007. Distribution Efficiency Initiative. Technical Report prepared for the Northwest Energy Efficiency Alliance, Portland, Oregon.

Studies indicate that energy consumption is reduced by 1 to 4% (2% PNNL<sup>3</sup>) on applicable circuits depending on reduction in voltage and several other factors, including load mix. A safety margin of at least two Volts will be maintained when implementing CVR to ensure that end of line (“EOL”) voltages never fall below the lower limit of 114V.

#### Target Market

The CVR program incorporates voltage regulation techniques on selected circuits, which include both residential and non-residential customers. TEP performed a review of its distribution system and selected a substation for the initial program with four feeders that are relatively short so as to minimize risk of lowering voltage at the end of the line to unacceptable levels.

#### Program Eligibility

All customers are eligible for this program with no out-of-pocket expense.

#### Current Baseline Conditions

The baseline voltage levels are established by the historical voltage control operations as measured by TEP Transmission and Distribution (“T&D”) engineers. The baseline must meet all applicable American National Standards Institute (“ANSI”) and Institute of Electrical and Electronics Engineers (“IEEE”) Standards for operation of electrical systems and meet recommended performance guidelines (e.g., minimum EOL primary voltage, power factor, load imbalance, etc.). Current voltage of the selected substation is 13.8 kV with an average feeder distribution voltage of 124V. Of the four feeders selected for the initial program, one is 100% commercial, one 100% residential, and two are 80% residential and 20% commercial. Total energy use in a typical meteorological year for the four feeders is 127 GWh. The available voltage reduction for each feeder is between 1V and 4V, depending on the real-time percent of peak load. The closer the demand to peak the lower the voltage is reduced. On average, the planned voltage reduction for the feeders is 2.1%.

#### Savings estimation methodology:

The following formula was used to estimate the energy savings:

$$EnergySaved_{ANNUAL-Estimated} = \Delta V_{ANNUAL-Estimated} \cdot CVR_{FACTOR-Estimated} \cdot TotalEnergy_{ANNUAL}$$

or

$$2,400 \text{ MWh} = 2.1\% \times .9 \times 127 \text{ GWh}$$

The  $\Delta V$  value is the % change in voltage implemented by the CVR program. It is calculated by taking the difference between the average pre-CVR voltage and the average post-CVR voltage and dividing it by the average pre-CVR voltage.  $\Delta V$  was estimated through a series of parametric modeling results of voltage reductions for various percentages of peak demand. Using the results of the modeling, the dynamic voltage reduction was interpolated for the demand profile.

Total annual energy was obtained from actual 15-minute interval load data from January 2012 through December 2012. The energy usage was weather-normalized using typical meteorological year (“TMY”) data from a local weather station.

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<sup>3</sup> Schneider, et al. “Evaluation of Conservation Voltage Reduction (CVR) on a National Level.” Pacific Northwest National Laboratory. July 2010.

The CVR Factor, or CVRf, is the ratio of per unit (or %) energy saved to per unit (or %) average voltage reduced, or  $CVRf = \Delta E / \Delta V$  where  $\Delta E$ =the % change in energy and  $\Delta V$ =the % change in voltage. The CVRf refers to a period of one year of energy savings and average voltage reduction. The CVRf represents the average slope on the utilization device's efficiency curve between the current voltage and the new proposed regulated voltage. For example, a CVRf of 1.00 would essentially indicate a 1% reduction in energy usage for every 1% reduction in voltage.

CVRf was developed by analyzing daily and seasonal load profiles to disaggregate air conditioning and electric space heating. Based on the load analysis, the CVRf was selected by interpolating values from the Regional Technical Forum's ("RTF's") CVR Standard M&V Protocol #1<sup>4</sup>. The chosen CVRf was compared to known factors from other similar utilities with evaluated CVR programs. Table 1 below, also from the RTF CVR Protocol, outlines a range of possible CVRfs contingent on load characteristics.

**Table 1. Annual CVR Factor Estimate**

	% Air Conditioning to Annual Load				
%Electric Space Heat of Annual Load	<20%	20% - 40%	40% - 60%	60% - 80%	>80%
<20%	0.800	0.825	0.850	0.875	0.900
20% - 40%	0.675	0.700	0.725	0.750	0.775
40% - 60%	0.550	0.575	0.600	0.625	0.650
60% - 80%	0.425	0.450	0.475	0.500	0.525
>80%	0.300	0.325	0.35	0.375	0.400

#### Products and Services

The CVR program will be implemented by TEP T&D engineers or contractors who will perform voltage set point changes at the selected substation(s). If required to ensure adequate voltage or to resolve individual customer issues as a result of the program, the Company employees or contractors will perform additional voltage mitigation activities, such as balancing loads, installing distribution circuit capacitors, regulators, or larger service transformers, and replacing primary or secondary wire.

#### Delivery Strategy, Incentives, Marketing and Administration

The program will be implemented by TEP T&D engineers and contractors at selected substations and circuits. Program monitoring including investigation and resolution of any voltage issues will be performed during implementation. There are no customer costs, incentives or marketing activities for this program, as customer participation is not solicited.

TEP staff will be responsible for administering the program. Responsibilities for staff will include coordination, planning, and implementation of all program activities. Measurement, Evaluation and Research ("MER") activities will be conducted by a third-party contractor.

<sup>4</sup> CVR Standard M&V Protocol #1, Draft – May 15, 2012. Developed by the Regional Technical Forum CVR Subcommittee and available here: <http://rtf.nwccouncil.org/subcommittees/cvr/>

### Program Implementation Schedule

Significant research has been undertaken in the design of this program. Upon Program approval by the Commission, TEP plans to immediately deploy its engineers to initiate the program. The Program will be substantially completed one year after implementation start-up.

### Measurement, Evaluation, and Research Plan

MER activities relating to the CVR program will focus on verification of planning assumptions through analysis of energy and demand data for the chosen circuit(s) for one year pre-program compared to data gathered during the first year of the program and normalized for weather.

A summary of MER tasks to be completed for CVR includes the following:

- Statistical analyses of metered hourly MW and kV data for each circuit collected for approximately one year before, and one year following, the voltage change(s) date.
- A statistical analysis of peak demand impacts using hourly voltage and energy data collected at the substation.

The data will be analyzed to determine the energy and demand savings attributable to the program. TEP engineering staff will closely monitor the CVR circuit to ensure system voltage remains within allowable tolerances all the way to the end of the line for all feeders involved. Energy flow data will also be gathered and regularly reviewed.

The program evaluation process (MER described above) will provide an additional level of quality assurance for the program.

### Cost-Effectiveness

Table 2 below provides a summary of program benefits and Table 3 provides a summary of program costs.

**Table 2. Program Benefits**

Program Measures	Base Efficiency	High Efficiency	Avg. Incentive	Estimated Savings (kWh)	Societal Test
DREX 34	No Regulation	With Regulation	\$0	634,687	4.3
DREX 35	No Regulation	With Regulation	\$0	365,473	2.5
DREX 36	No Regulation	With Regulation	\$0	665,899	4.5
DREX 44	No Regulation	With Regulation	\$0	637,371	4.3

**Table 3. Program Costs**

Year	Incentives	Program Delivery	Program Marketing	Utility Administration	Evaluation	Total Program Cost	Program Cost per Lifetime kWh Saved (\$/kWh)	Program Cost per First Year kWh Saved (\$/kWh)
2014	\$0	\$373,482	\$0	\$15,746	\$20,168	\$409,396	\$0.01	\$0.16

## Exhibit 1

### Performance Metrics for Cost Recovery

If the Energy Efficiency Resource Plan ("EERP") is approved in TEP's 2012 Rate Case Order, TEP requests Commission approval to set the 2014 threshold performance target at 98,411 MWh savings and \$0.023/kWh lifetime cost. This sets the minimum performance target for MWh savings and the maximum \$/kWh lifetime cost for 2014. The Company will be required to meet this threshold performance target before receiving DSM/EE program cost recovery and a return on its capital investment for EE/DSM. This threshold scenario presents a minimum performance expectation for the Company.

#### Threshold Performance Target

Program Year	Total Program Budget	Annual Energy Savings at Generator (MWh)	Lifetime Energy Savings (MWh)	Peak Demand Savings (MW)	\$/kWh (Lifetime)	Portfolio Societal Test Ratio
2014	\$18,173,480	98,411	792,887	33.40	\$0.023	2.3

TEP will provide alternative scenarios to Commission Staff at their request.

# Exhibit 2

## Exhibit 2- Section 1

Program Name	Measure Name	Basecase Description	EE Case Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Coincident Demand Saved	Effective Useful Life	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	Societal Test	New, Existing, Suspended
Efficient Products	Advanced Power Strips - Load Sensor	Standard strips	Smart Strips - Load Sensor	Per Sensor	82	0	0.01	12	\$32	\$2	150	1.49	Pending
Efficient Products	ES Integral CFL <sup>1</sup>	54 W Blended	16 W CFL	Per bulb	39	0	0.00	7	\$1	\$1	1,200,000	7.02	Existing
Efficient Products	Pool Pump Timers	no timer	Pool Pump Timers	Per Unit	1,105	0	0.23	10	\$198	\$0	0	3.31	Pending
Efficient Products	Residential LED light <sup>2</sup>	46.6 W Inc/Halogen	12.6 Weighted Avg W LED	Per bulb	44	0	0.00	15	\$14	\$2	3,500	2.06	New
Efficient Products	Residential 2x Incandescent	Inc/Halogen	50W 2x Incandescent	Per bulb	21	0	0.00	2	\$1	\$0	2,000	1.70	New
Efficient Products	Heat Pump Water Heater - Residential	0.90 EF Electric Water Heater	2.35 EF Heat Pump Water Heater	Per unit	1,515	0	0.10	15	\$909	\$57	20	1.17	New
Efficient Products	ENERGY STAR Ceiling Fan	Conventional Fan	Energy Star Ceiling Fan	Per unit	148	0	0.03	10	\$46	\$4	100	1.74	New
Efficient Products	ENERGY STAR Freezer	Conventional Freezer	Energy Star Freezer	Per unit	48	0	0.01	12	\$10	\$1	25	2.69	New
Efficient Products	ENERGY STAR Central Air Conditioner	Conventional Central AC (13 SEER)	ENERGY STAR Central AC (14.5 SEER)	Per unit	1,511	0	1.31	14	\$556	\$53	150	3.57	New
Efficient Products	ENERGY STAR Clothes Washer	Conventional Washer	ENERGY STAR Washer	Per unit	172	0	0.02	11	\$240	\$5	200	1.24	New
Efficient Products	ENERGY STAR Dishwasher	Conventional Dishwasher	ENERGY STAR Dishwasher	Per unit	48	0	0.00	11	\$10	\$1	150	3.82	New
Efficient Products	ENERGY STAR Refrigerator	Conventional Refrigerator	ENERGY STAR Refrigerator	Per unit	108	0	0.01	12	\$30	\$3	100	2.08	New
Efficient Products	ENERGY STAR Room Air Conditioner	Conventional Room AC	ENERGY STAR Room AC	Per unit	199	0	0.02	9	\$50	\$4	75	1.94	New
Efficient Products	Water Heater Blanket	No blanket	R-10 Blanket	Per Unit	230	0	0.02	7	\$22	\$4	50	3.33	New
Efficient Products	Variable Spd Pool Pump <sup>3</sup>	single speed baseline	Variable Spd Pool Pump	Per Unit	1,340	0	0.28	10	\$421	\$33	250	1.75	Pending

## Exhibit 2- Section 2

Program Name	Measure Name	Basecase Description	EE Case Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Coincident Demand Saved	Effective Useful Life	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	Societal Test	New, Existing, Suspended
Appliance Recycling	Freezer Recycling <sup>4</sup>	2nd freezer plugged in	remove 2nd freezer	Per Unit	942	0	0.13	6	\$98	\$134	300	1.34	Pending
Appliance Recycling	Refrigerator Recycling <sup>4</sup>	2nd fridge plugged in	remove 2nd fridge	Per Unit	1,242	0	0.17	6	\$98	\$177	2,700	1.49	Pending

## Exhibit 2- Section 3

Program Name	Measure Name	Basecase Description	EE Case Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Coincident Demand Saved	Effective Useful Life	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	Societal Test	New, Existing, Suspended
Res. New Construction	ENERGY Smart Homes (All Electric) <sup>5</sup>	standard home	HERS <= 65	Per Home	2,527	0	1.43	30	\$1,544	\$625	350	2.29	Pending
Res. New Construction	ENERGY Smart Homes (Dual Fuel) <sup>5</sup>	standard home	HERS <= 65	Per Home	1,861	139	1.61	30	\$1,576	\$460	350	5.22	Pending
Res. New Construction	ENERGY Smart Homes - Tier 2 (All Electric) <sup>5</sup>	standard home	HERS <= 70	Per Home	3,164	0	1.79	30	\$3,995	\$0	0	1.56	Suspend
Res. New Construction	ENERGY Smart Homes - Tier 2 (Dual Fuel) <sup>5</sup>	standard home	HERS <= 70	Per Home	1,683	89	1.46	30	\$3,995	\$0	0	2.03	Suspend
Res. New Construction	ENERGY Smart Homes - Tier 3 <sup>5</sup>	standard home	HERS <= 45	Per Home	2,183	0	1.24	30	\$19,153	\$0	0	0.22	Suspend

## Exhibit 2- Section 4

Program Name	Measure Name	Basecase Description	EE Case Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Coincident Demand Saved	Effective Useful Life	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	Societal Test	New, Existing, Suspended
Existing Homes	Air Sealing (All electric)	no action	Air Sealing	Per Home	546	0	0.39	20	\$370	\$210	240	1.52	Existing
Existing Homes	Air Sealing & Attic Insulation (All electric) <sup>6</sup>	no action	Air Sealing & Attic Insulation	Per Home	1,447	0	0.90	20	\$1,165	\$557	25	1.28	Existing
Existing Homes	Air Sealing & Attic Insulation (Dual fuel) <sup>6</sup>	no action	Air Sealing & Attic Insulation	Per Home	1,042	0	0.90	20	\$1,165	\$401	25	1.32	Existing
Existing Homes	Duct Test and Repair _Performance (All electric) <sup>6</sup>	no action	Duct Sealing with Testing	Per Home	751	0	0.47	20	\$710	\$289	140	1.15	Existing
Existing Homes	Duct Test and Repair _Performance (Dual fuel) <sup>6</sup>	no action	Duct Sealing with Testing	Per Home	533	0	0.33	20	\$710	\$205	140	1.02	Existing
Existing Homes	Duct Sealing (Prescriptive) <sup>7</sup>	no action	Duct Sealing with Testing	Per Home	590	0	0.37	20	\$935	\$0	0	0.96	Suspend
Existing Homes	ER HVAC w- QI and Duct Sealing _Performance (Electric) <sup>6</sup>	SEER 9	EnergyStar	Per Home	1,862	0	1.61	20	\$1,902	\$716	325	1.25	Existing
Existing Homes	ER HVAC w- QI and Duct Sealing _Performance (Dual) <sup>6</sup>	SEER 9	EnergyStar	Per Home	1,364	0	1.18	20	\$1,902	\$525	325	1.11	Existing
Existing Homes	ER HVAC w- QI and Duct Sealing _Prescriptive <sup>7</sup>	SEER 9	EnergyStar	Per Home	2,056	0	1.58	20	\$1,902	\$0	0	1.80	Suspend
Existing Homes	ROB HVAC w- QI and Duct Sealing (Performance) <sup>8</sup>	SEER 13	EnergyStar	Per Home	1,039	0	0.72	20	\$1,765	\$0	0	0.94	Suspend

# Exhibit 2

## Exhibit 2- Section 4

Program Name	Measure Name	Basecase Description	EE case Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Coincident Demand Saved	Effective Useful Life	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	Societal Test	New, Existing, Suspend
Existing Homes	ROB HVAC w-QI and Duct Sealing (Prescriptive) <sup>8</sup>	SEER 13	EnergyStar	Per Home	1,039	0	0.72	20	\$1,765	\$0	0	0.94	Suspend
Existing Homes	HVAC/QI	No QI	With QI	Per Unit	713	0	0.56	10	\$330	\$137	1,000	1.49	New
Existing Homes	Shade Screens (All electric)	no action	Install shade screens	Per Home	1,060	0	0.92	10	\$708	\$204	220	1.03	Existing
Existing Homes	Screw in CFL - Direct Install from Audit <sup>8</sup>	no action	Install 10 CFL	Per Home	419	0	0.01	10	\$16	\$0	0	13.15	Suspend
Existing Homes	Advanced Power Strips - Direct Install from Audit <sup>9</sup>	no action	Install Advanced Power Strip	Per Home	82	0	0.01	10	\$20	\$0	0	2.17	Suspend
Existing Homes	Behavioral changes from Energy Assessments <sup>9</sup>	no action	Behavioral Changes	Per Home	215	0	0.03	10	\$350	\$0	0	0.35	Suspend

## Exhibit 2- Section 5

Program Name	Measure Name	Basecase Description	EE case Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Coincident Demand Saved	Effective Useful Life	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	Societal Test	New, Existing, Suspend
Shade Tree	Shade Tree <sup>10</sup>	No Trees	Additional Trees	per Tree	56	0	0.02	30	\$77	\$6	4,300	1.23	Existing

## Exhibit 2- Section 6

Program Name	Measure Name	Basecase Description	EE case Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Coincident Demand Saved	Effective Useful Life	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	Societal Test	New, Existing, Suspend
Low Income Weatherization	Low Income Weatherization <sup>11</sup>	no action	Multiple EE measures	Per Home	2,360	41	0.01	17.5	\$1,552	\$472	150	1.30	Existing

## Exhibit 2- Section 7

Program Name	Measure Name	Basecase Description	EE case Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Coincident Demand Saved	Effective Useful Life	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	Societal Test	New, Existing, Suspend
Multi-Family	ES Integral CFL	61W Incd/Halogen	14 W CFL	Per bulb	37	0	0.00	6	\$2	\$8	6,400	1.14	Pending
Multi-Family	Low Flow Showerheads - Electric WH	4 GPM	1.5 GPM with hot water sensor	Per shower	256	0	0.02	10	\$17	\$94	800	1.21	Pending
Multi-Family	Faucet Aerators - Electric WH only	2.2 GPM	1.5 GPM	per faucet	77	0	0.01	10	\$2	\$28	800	1.31	Pending

## Exhibit 2- Section 8

Program Name	Measure Name	Basecase Description	EE case Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Coincident Demand Saved	Effective Useful Life	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	Societal Test	New, Existing, Suspend
C&I Comprehensive	14 SEER Packaged and Split AC's <sup>12</sup>	SEER 13	SEER 14	Per Unit	489	0	0.24	15	\$440	\$40	10	1.17	Existing
C&I Comprehensive	14 SEER Packaged and Split HP's <sup>12</sup>	SEER 13	SEER 14	Per Unit	764	0	0.25	15	\$440	\$62	10	1.51	Existing
C&I Comprehensive	15 SEER Packaged and Split AC's <sup>12</sup>	SEER 13	SEER 15	Per Unit	913	0	0.44	15	\$880	\$74	15	1.09	Existing
C&I Comprehensive	15 SEER Packaged and Split HP's <sup>12</sup>	SEER 13	SEER 15	Per Unit	1,525	0	0.47	15	\$880	\$124	15	1.49	Existing
C&I Comprehensive	16 SEER Packaged and Split AC's <sup>12</sup>	SEER 13	SEER 16	Per Unit	1,283	0	0.62	15	\$1,321	\$104	10	1.03	Existing
C&I Comprehensive	16 SEER Packaged and Split HP's <sup>12</sup>	SEER 13	SEER 16	Per Unit	2,129	0	0.66	15	\$1,321	\$173	10	1.40	Existing
C&I Comprehensive	17 SEER Packaged and Split AC's <sup>12</sup>	SEER 13	SEER 17	Per Unit	1,610	0	0.78	15	\$1,761	\$131	5	0.97	Existing
C&I Comprehensive	17 SEER Packaged and Split HP's <sup>12</sup>	SEER 13	SEER 17	Per Unit	2,675	0	0.83	15	\$1,761	\$217	5	1.33	Existing
C&I Comprehensive	18 SEER Packaged and Split AC's <sup>12</sup>	SEER 13	SEER 18	Per Unit	1,901	0	0.92	15	\$2,201	\$154	5	0.92	Existing
C&I Comprehensive	18 SEER Packaged and Split HP's <sup>12</sup>	SEER 13	SEER 18	Per Unit	3,235	0	0.99	15	\$2,201	\$262	5	1.28	Existing
C&I Comprehensive	Advanced Power Strips - Occupancy Sensors	standard strips	Smart Strips - Occupancy	Per Sensor	170	0	0.02	12	\$75	\$11	75	1.24	Pending
C&I Comprehensive	Advanced Power Strips - Timer Plug Strip	standard strips	Smart Strips - Timer	Per Sensor	213	0	0.02	12	\$19	\$14	75	4.05	Pending
C&I Comprehensive	Advanced Power Strips - Load Sensor	standard strips	Smart Strips - Load Sensor	Per Sensor	118	0	0.01	12	\$32	\$8	75	1.86	Pending
C&I Comprehensive	Air Cooled Chillers < 150 tons <sup>12</sup>	1.28 kW/ton	1.12 kW/ton	Per ton	166	0	0.08	20	\$61	\$18	300	3.07	Existing
C&I Comprehensive	Air Cooled Chillers > 150 tons <sup>12</sup>	1.28 kW/ton	1.12 kW/ton	Per ton	170	0	0.08	20	\$63	\$18	300	3.07	Existing
C&I Comprehensive	Anti sweat heater controls	no controls	antisweat controls	Per Lin Ft	246	0	0.04	12	\$36	\$16	600	3.08	Existing
C&I Comprehensive	Anti sweat heater controls	no controls	occupancy sensors	Per Sensor	1,610	0	0.22	12	\$199	\$104	100	3.41	Pending
C&I Comprehensive	Beverage Ctrls ("vending miser")	no sensors	occupancy sensors	Per Sensor	27,752	0	3.17	8	\$2,000	\$1,200	20	4.25	Pending
C&I Comprehensive	CO2 Sensors	no sensors	sensors	Per Sensor	1,420	0	0.69	15	\$950	\$115	20	1.53	Pending

# Exhibit 2

Exhibit 2- Section 8

Program Name	Measure Name	Baseline Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Calculated Demand Saved	Effective Useful Life	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	Societal Test	New, Existing, Suspended
C&I Comprehensive	Coin Operated Washers Advanced (Proposed)	1.26 MEF	Per Machine	680		0	0.09	\$537	\$40	5	1.90	Suspend
C&I Comprehensive	Coin Operated Washers (Proposed)	2.6 MEF	Per Machine	488		0	0.07	\$211	\$29	25	2.90	Pending
C&I Comprehensive	Coin Operated Washers (Proposed)	1.26 MEF	Per Machine	564		0	0.08	\$326	\$34	25	2.54	Pending
C&I Comprehensive	Coin Operated Washers (Proposed)	2.2 MEF	Per Machine	627		0	0.08	\$307	\$37	25	2.94	Pending
C&I Comprehensive	Cooling Tower Subcooling	1.26 MEF	Per Ton	888		0	0.43	\$829	\$72	5	1.13	Pending
C&I Comprehensive	Custom Measures	no subcooling	per customer	32,674		0	15.86	\$6,535	\$1,765	155	3.03	Existing
C&I Comprehensive	Daylighting controls	no controls	Per kW	1,825		0	0.24	\$751	\$148	15	1.57	Existing
C&I Comprehensive	Daylighting controls	78s and T12s	Per Lamp	151		0	0.01	\$6	\$12	8,500	6.12	Existing
C&I Comprehensive	Economizers	use of economizers	Per Ton	925		0	0.45	\$84	\$75	5	6.66	Pending
C&I Comprehensive	EER Rated Packaged AC (< 5 tons, 11.36 EER) <sup>12</sup>	10.3 EER	Per Unit	1,308		0	0.63	\$1,112	\$106	10	1.23	Existing
C&I Comprehensive	EER Rated Packaged AC (> 20tons, 10.9 EER) <sup>12</sup>	9.5 EER	Per Unit	14,131		0	6.86	\$5,985	\$1,145	5	2.27	Existing
C&I Comprehensive	EER Rated Packaged AC (11.5 - 20 tons, 11.24 EER) <sup>12</sup>	9.3 EER	Per Unit	7,448		0	3.61	\$5,944	\$604	7	1.30	Existing
C&I Comprehensive	EER Rated Packaged AC (5.4 - 11.25 tons, 11.36 EER) <sup>12</sup>	10 EER	Per Unit	2,718		0	1.32	\$1,459	\$220	39	1.85	Existing
C&I Comprehensive	EER Rated Packaged HP (< 5 tons, 11.11 EER) <sup>12</sup>	10.3 EER	Per Unit	1,706		0	0.65	\$1,112	\$138	10	1.41	Existing
C&I Comprehensive	EER Rated Packaged HP (> 20 tons, 11.11 EER) <sup>12</sup>	9.5 EER	Per Unit	15,898		0	6.94	\$8,378	\$1,288	5	1.77	Existing
C&I Comprehensive	EER Rated Packaged HP (11.25 - 20 tons, 11.02 EER) <sup>12</sup>	9.3 EER	Per Unit	8,568		0	3.67	\$5,944	\$694	7	1.38	Existing
C&I Comprehensive	Efficient Compressors	10 EER	Per Unit	3,318		0	1.35	\$1,459	\$269	39	2.02	Existing
C&I Comprehensive	Efficient Condensers	1.85 COP	Per Ton	1,920		0	0.27	\$247	\$156	3	3.76	Pending
C&I Comprehensive	EMS - HVAC and Cold Deck Reset	no condensers	Per Ton	261		0	0.04	\$39	\$14	3	2.65	Pending
C&I Comprehensive	Energy efficient exit signs	LED sign	Per Sq. Ft.	4		0	0.00	\$1	\$0	250	1.68	New
C&I Comprehensive	Energy efficient ODP motors <sup>13</sup>	88.7 % effy	Per fixture	192		0	0.02	\$55	\$17	450	2.15	Existing
C&I Comprehensive	Energy Efficient TFC Motors <sup>13</sup>	89.3 % effy	Per HP	19		0	0.00	\$2	\$2	800	4.24	Existing
C&I Comprehensive	Floating Head Pressure Controls	no controls	Per Ton	1,838		0	0.26	\$93	\$149	20	5.99	Pending
C&I Comprehensive	Green Motor Rewind	94.7% effy	Per HP	18		0	0.00	\$3	\$0	10	1.47	Pending
C&I Comprehensive	Heat Pump Water Heaters - Tier 1	EF = 2.35	Per Unit	7,488		0	1.00	\$1,910	\$526	3	2.12	Pending
C&I Comprehensive	Heat Pump Water Heaters - Tier 2	EF = 2.51	Per Unit	7,763		0	1.01	\$2,777	\$545	3	1.60	Pending
C&I Comprehensive	HIDs to T8/T5 - Exterior	263 W T5/T8s	Per Fixture	1,089		0	0.04	\$101	\$106	350	4.35	Existing
C&I Comprehensive	HIDs to T8/T5 - Interior	263 W T5/T8s	Per Fixture	1,009		0	0.13	\$115	\$98	1,800	4.28	Existing
C&I Comprehensive	High Efficiency Evaporator Fan Motors (PSC)	shaded pole motor	Per Unit	826		0	0.12	\$129	\$67	3	3.32	Existing
C&I Comprehensive	High Efficiency Evaporator Fan Motors (ECM)	shaded pole motor	Per Unit	758		0	0.11	\$156	\$61	75	2.75	Existing
C&I Comprehensive	Evaporative fan controls	EC motor with controls	Per Unit	1,041		0	0.15	\$353	\$67	10	1.59	New
C&I Comprehensive	High Efficiency Ice Makers	Standard Ice-maker	Per Unit	1,048		0	0.15	\$549	\$68	10	1.09	Existing
C&I Comprehensive	High Efficiency Reach-in Refrigerators and Freezers	standard reach-in	Per Unit	1,031		0	0.14	\$183	\$84	75	3.05	Existing
C&I Comprehensive	High Perf glazing	standard window glazing	Per sq ft	2		0	0.00	\$2	\$0	75	1.44	Pending
C&I Comprehensive	HVAC System Test and Repair	No Test and Repair	Per Unit	1,903		0	0.99	\$948	\$185	25	2.31	New
C&I Comprehensive	Variable Refrigerant Flow	Standard Refrigerant Flow	Per kWh/h	26		0	0.02	\$10	\$3	250	3.07	New
C&I Comprehensive	Hotel Room HVAC Control	Standard no-Sensor	Per Sensor	854		0	0.17	\$159	\$37	50	2.26	New
C&I Comprehensive	Induction Lighting	190 W Metal Halide or HPS	Per Lamp	451		0	0.04	\$196	\$44	1,000	1.63	Pending
C&I Comprehensive	Integral Screw In CFL <sup>14</sup>	79.3 W Incandescent bulb	Per Bulb	199		0	0.02	\$11	\$4	2,000	2.19	Existing
C&I Comprehensive	Hard Wire CFL <sup>14</sup>	73 W Incandescent bulb	Per Bulb	188		0	0.02	\$16	\$4	1,500	1.63	Existing
C&I Comprehensive	LED Channel Signs <sup>15</sup>	6W/ft Neon	Per Linear Ft	25		0	0.00	\$10	\$1	5	1.11	Pending
C&I Comprehensive	LED Indoor Lights	56W Incandescent	Per Lamp	162		0	0.02	\$47	\$9	300	1.54	New
C&I Comprehensive	LED Pedestrian Signals	69 W LED	Per Signal	492		0	0.06	\$134	\$13	5	0.91	Pending

## Exhibit 2

Exhibit 2 - Section 8											
Program Name	Measure Name	Basecase Description	EE Case Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Coincident Demand Saved	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	New, Existing, Suspended
C&I Comprehensive	LED Street and Parking Lights	250 W Metal Halide	33 W LED	Per Lamp	950	0	0.00	\$800	\$0	0	Pending
C&I Comprehensive	LED Traffic Lights	100 W Incandescent	8 W LED	Per Lamp	392	0	0.04	\$71	\$15	50	Pending
C&I Comprehensive	Bi-Level Lighting	Standard Lighting Design	Bi-Level Lighting Design	Per Lamp	247	0	0.01	\$264	\$0	0	0.66
C&I Comprehensive	Refrigeration LED Strip Lighting	32 W T-8	20 W LED	Per Door	243	0	0.05	\$85	\$12	50	1.35
C&I Comprehensive	Canopy LED Lighting	455 & 458 W MH	108 W LED	Per Lamp	1,533	0	0.00	\$469	\$149	300	1.89
C&I Comprehensive	Computer Power Monitoring System	no power monitor	computer power monitor	Per Fixture	218	0	0.01	\$12	\$5	2,000	2.73
C&I Comprehensive	Pulse Start Metal Halide - Interior	Conventional MH Lamp	Pulse Start MH Lamp	Per Lamp	572	0	0.07	\$260	\$46	75	1.45
C&I Comprehensive	Pulse Start Metal Halide - Exterior	Conventional MH Lamp	Pulse Start MH Lamp	Per Lamp	626	0	0.02	\$234	\$51	75	1.56
C&I Comprehensive	Night Covers	No covers	Covers	Per linear feet	175	0	0.00	\$38	\$0	0	0.80
C&I Comprehensive	Occupancy sensors <sup>12</sup>	no sensors	occupancy sensors	Per sensor	442	0	0.06	\$105	\$29	1,000	2.07
C&I Comprehensive	Outdoor CFL <sup>14</sup>	112 W Incand.	25 W CFL	Per Lamp	382	0	0.02	\$9	\$10	250	5.18
C&I Comprehensive	Premium T8 Lighting <sup>15</sup>	T12 Lamps	Premium T8 Lamps	Per Fixture	48	0	0.00	\$16	\$4	10,000	1.75
C&I Comprehensive	Programmable Thermostats	non-programmable	programmable	Per Unit	4,096	0	0.00	\$204	\$243	100	5.53
C&I Comprehensive	PTAC	10 EER	11 EER	Per kWh/h	1,963	0	0.95	\$11	\$159	10	13.20
C&I Comprehensive	PTHP	10 EER	11 EER	Per kWh/h	2,714	0	1.23	\$130	\$220	10	8.42
C&I Comprehensive	Refrigerated Display Automatic Door Closers	standard doors	Automatic Door Closers	Per Door	3,535	0	0.49	\$142	\$95	10	4.18
C&I Comprehensive	Refrigerated Display Gaskets	no action	Replace Gaskets	Per Linear Ft	104	0	0.01	\$12	\$2	10	1.36
C&I Comprehensive	Screw in cold cathode CFL	51 W Incandescent bulb	7W CFL	Per Bulb	194	0	0.01	\$12	\$6	10	3.16
C&I Comprehensive	Shade Screens	no screens	shading coeff: 0.24	Per Sq Ft	16	0	0.01	\$4	\$1	2,000	2.42
C&I Comprehensive	Snack Chills ("vending miser")	no controls	occupancy sensors	Per Sensor	322	0	0.04	\$103	\$21	450	1.68
C&I Comprehensive	Reach-In Cooler Controls ("Cool miser")	no controls	occupancy sensors	Per Sensor	1,200	0	0.17	\$199	\$78	15	2.79
C&I Comprehensive	Standard T8 Lighting <sup>16</sup>	T12 Lamps	Standard T8 Lamps	Per Lamp	26	0	0.00	\$17	\$2	4,500	1.04
C&I Comprehensive	Strip Curtains	No curtains	Curtains	Per Sq feet	478	0	0.07	\$10	\$10	25	5.30
C&I Comprehensive	T8 to T8	standard T8	premium T8	Per Lamp	17	0	0.00	\$31	\$0	0	0.40
C&I Comprehensive	Variable Speed Drives <sup>17</sup>	no VSD	VSD	per HP	2,317	0	0.36	\$387	\$188	3,000	3.24
C&I Comprehensive	Water Cooled Chillers - Centrifugal < 150 tons <sup>11</sup>	Single stage modulating	1 or 2 stage variable speed	PerHp	376	0	0.06	\$62	\$30	200	1.16
C&I Comprehensive	Water Cooled Chillers - Centrifugal > 300 tons <sup>12</sup>	0.70 kW/Ton	0.56 kW/Ton	Per ton	194	0	0.09	\$138	\$21	750	1.79
C&I Comprehensive	Water Cooled Chillers - Centrifugal 150 - 299 tons <sup>12</sup>	0.58 kW/Ton	0.46 kW/Ton	Per ton	166	0	0.08	\$118	\$18	3,000	1.79
C&I Comprehensive	Water Cooled Chillers - Reciprocating All Sizes <sup>12</sup>	0.63 kW/Ton	0.51 kW/Ton	Per ton	176	0	0.09	\$125	\$19	1,500	1.79
C&I Comprehensive	Water Cooled Chillers - Screw < 150 tons <sup>12</sup>	0.79 kW/Ton	0.63 kW/Ton	Per ton	219	0	0.11	\$87	\$24	50	2.91
C&I Comprehensive	Water Cooled Chillers - Screw > 300 tons <sup>12</sup>	0.64 kW/Ton	0.51 kW/Ton	Per ton	177	0	0.09	\$65	\$19	500	3.08
C&I Comprehensive	Water Cooled Chillers - Screw 150 - 299 tons <sup>12</sup>	0.72 kW/Ton	0.57 kW/Ton	Per ton	200	0	0.10	\$59	\$36	175	3.10
C&I Comprehensive	Window Films	no film	shading coeff: 0.578	Per Sq Ft	8	0	0.00	\$3	\$1	70	2.42

Exhibit 2 - Section 9											
Program Name	Measure Name	Basecase Description	EE Case Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Coincident Demand Saved	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	New, Existing, Suspended
Small Business Direct Install	14 SEER Packaged and Split AC's <sup>12</sup>	SEER 13	SEER 14	Per Unit	489	0	0.24	\$440	\$60	5	1.12
Small Business Direct Install	14 SEER Packaged and Split HP's <sup>12</sup>	SEER 13	SEER 14	Per Unit	764	0	0.25	\$440	\$93	10	1.42
Small Business Direct Install	15 SEER Packaged and Split AC's <sup>12</sup>	SEER 13	SEER 15	Per Unit	913	0	0.44	\$880	\$111	10	1.05
Small Business Direct Install	15 SEER Packaged and Split HP's <sup>12</sup>	SEER 13	SEER 15	Per Unit	1,525	0	0.47	\$880	\$186	10	1.40
Small Business Direct Install	16 SEER Packaged and Split AC's <sup>12</sup>	SEER 13	SEER 16	Per Unit	1,283	0	0.62	\$1,321	\$156	10	0.99
Small Business Direct Install	16 SEER Packaged and Split HP's <sup>12</sup>	SEER 13	SEER 16	Per Unit	2,129	0	0.66	\$1,321	\$259	10	1.32
Small Business Direct Install	Advanced Power Strips - Occupancy Sensors	Standard strips	Smart Strips - Occupancy	Per Sensor	170	0	0.02	\$75	\$17	10	1.16
Small Business Direct Install	Advanced Power Strips - Timer Plug Strip	Standard strips	Smart Strips - Timer	Per Sensor	213	0	0.02	\$19	\$21	10	3.35

# Exhibit 2

Exhibit 2- Section 9

Program Name	Measure Name	Basecase Description	EE Case Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Coincident Demand Saved	Effective Useful Life	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	Societal Test	New, Existing, Suspended
Small Business Direct Install	Advanced Power Strips - Load Sensor	standard strips	Smart Strips - Load	Per Sensor	118	0	0.01	12	\$32	\$11	10	1.69	Pending
Small Business Direct Install	Anti sweat heater controls	no controls	antisweat controls	Per Lin Ft	246	0	0.04	12	\$36	\$24	1,000	2.66	Existing
Small Business Direct Install	Beverage Crls ("vending miser")	no controls	occupancy sensors	Per Sensor	1,610	0	0.22	12	\$199	\$157	50	2.91	Pending
Small Business Direct Install	Daylighting controls	no controls	daylighting controls	Per kW base	1,825	0	0.24	15	\$751	\$222	15	1.45	Existing
Small Business Direct Install	Delamping	no controls	Remove T8s and T12s	Per Lamp	151	0	0.01	15	\$57	\$18	10,000	1.49	Existing
Small Business Direct Install	Energy efficient exit signs	Incandescent/CFL sign	LED sign	Per fixture	192	0	0.02	16	\$55	\$25	250	1.93	Existing
Small Business Direct Install	Evaporative fan controls	no controls	fan controls	Per Motor	1,041	0	0.15	12	\$353	\$101	150	1.47	Existing
Small Business Direct Install	Hard Wire CFL <sup>14</sup>	73.4 W Incandescent bulb	16.6 W CFL	Per Bulb	170	0	0.02	4	\$16	\$5	500	1.35	Existing
Small Business Direct Install	HIDs to T8/T5 - Exterior	565W Metal Halide	263 W T5/T8s	Per Fixture	1,089	0	0.04	18	\$101	\$159	250	3.46	Existing
Small Business Direct Install	HIDs to T8/T5 - Interior	565W Metal Halide	263W T5/T8s	Per Fixture	1,058	0	0.14	18	\$115	\$129	300	3.36	Existing
Small Business Direct Install	High Efficiency Evaporator Fan Motors (ECM)	shaded pole motor	ECM	Per Unit	758	0	0.11	15	\$156	\$92	150	2.41	Existing
Small Business Direct Install	High Efficiency Evaporator Fan Motors (PSC)	shaded pole motor	PSC	Per Unit	826	0	0.12	15	\$129	\$100	10	2.83	Existing
Small Business Direct Install	Induction Lighting	229 W Metal Halide	96 W Induction lamp	Per Lamp	452	0	0.04	18	\$196	\$66	50	1.50	Pending
Small Business Direct Install	Integral Screw In CFL <sup>14</sup>	79.3 W Incandescent bulb	19.1 W CFL	Per Bulb	180	0	0.02	4	\$11	\$6	2,000	1.76	Existing
Small Business Direct Install	LED Channel Signs <sup>15</sup>	6W/ft Neon	1.2 W/ft LED	Per Linear Ft	25	0	0.00	10	\$10	\$2	100	1.05	Pending
Small Business Direct Install	LED Indoor Lights	56W Incandescent	7W CFL	Per Lamp	162	0	0.02	10	\$47	\$13	200	1.43	New
Small Business Direct Install	Night Covers	no covers	Covers	Per Lin feet	175	0	0.00	4	\$38	\$6	50	0.69	Suspend
Small Business Direct Install	Occupancy sensors	no sensors	occupancy sensors	Per sensor	442	0	0.06	12	\$105	\$43	300	1.87	Existing
Small Business Direct Install	Outdoor CFL	112 W Incand.	25 W CFL	Per Lamp	382	0	0.02	5	\$9	\$15	1,000	4.07	Pending
Small Business Direct Install	Premium T8 Lighting <sup>16</sup>	T12 Lamps	Premium T8 Lamps	Per Lamp	61	0	0.01	15	\$16	\$7	10,000	1.90	Pending
Small Business Direct Install	Programmable Thermostats	non-programmable	programmable	Per Unit	4,096	0	0.00	11	\$204	\$966	350	4.34	Existing
Small Business Direct Install	Reach-in Cooler Controls ("vending miser")	no controls	occupancy sensors	Per Sensor	1,200	0	0.17	12	\$199	\$117	25	2.44	Pending
Small Business Direct Install	Reduced LPD	1.21 W/sqft	1.09 W/sqft	per building	13,283	0	1.74	12	\$4,472	\$1,294	3	1.46	Pending
Small Business Direct Install	Refrigerated Display Automatic Door Closers	standard doors	Automatic Door Closers	Per Door	3,535	0	0.49	5	\$142	\$143	25	3.47	Pending
Small Business Direct Install	Refrigerated Display Gaskets	no action	Replace Gaskets	Per Linear Ft	104	0	0.01	3	\$12	\$3	25	1.28	Pending
Small Business Direct Install	Screw in cold cathode CFL	51 W Incandescent bulb	7W CFL	Per Bulb	194	0	0.01	6	\$12	\$9	25	2.77	Existing
Small Business Direct Install	Shade Screens	no screens	shading coeff: 0.24	Per Sq Ft	16	0	0.01	10	\$4	\$1	25	2.23	Pending
Small Business Direct Install	Snack Crls ("vending miser")	no controls	occupancy sensors	Per Sensor	322	0	0.04	12	\$103	\$31	25	1.55	Pending
Small Business Direct Install	Standard T8 Lighting <sup>16</sup>	T12 Lamps	Standard T8 Lamps	Per Lamp	31	0	0.00	15	\$17	\$4	10,000	1.14	Existing
Small Business Direct Install	Strip Curtains	No curtains	Curtains	Per Sq feet	478	0	0.07	4	\$10	\$16	25	4.23	Existing
Small Business Direct Install	T8 to T8	standard T8	premium T8	Per Fiure	66	0	0.00	15	\$59	\$0	0	0.78	Suspend
Small Business Direct Install	Variable Speed Drives	no VSD	VSD	per HP	2,317	0	0.36	15	\$377	\$282	125	2.83	Existing
Small Business Direct Install	Window Films	no film	shading coeff: 0.578	Per Sq Ft	8	0	0.00	15	\$3	\$1	30	2.49	Pending

Exhibit 2- Section 10

Program Name	Measure Name	Basecase Description	EE Case Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Coincident Demand Saved	Effective Useful Life	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	Societal Test	New, Existing, Suspended
Commercial New Construction	Design Assistance Incentives to Design teams				0	0	0.00	20	\$0	\$0	1	0.00	Existing
Commercial New Construction	EER Rated Packaged AC (> 20tons, 10.9 EER)		10.8 EER	Per Unit	14,131	0	6.86	15	\$5,985	\$1,986	20	2.03	Existing
Commercial New Construction	EER Rated Packaged AC (11.5 - 20 tons, 11.24 EER)		11.1 EER	Per Unit	7,448	0	3.61	15	\$5,944	\$1,047	20	1.22	Existing
Commercial New Construction	EER Rated Packaged AC (5.4 - 11.25 tons, 11.36 EER)		11.6 EER	Per Unit	2,718	0	1.32	15	\$1,459	\$382	20	1.69	Existing
Commercial New Construction	High Perf Glazing	standard glazing	SHGC = .27	Per sq ft	2	0	0.00	20	\$2	\$0	1,000	1.33	Existing
Commercial New Construction	Assistance <sup>17</sup>	Baseline Building	20% savings	Per Customer	156,000	0	75.71	20	\$20,800	\$29,236	3	4.57	Existing

## Exhibit 2

### Exhibit 2 - Section 11

Program Name	Measure Name	Baseline Description	EE Case Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Coincident Demand Saved	Effective Useful Life	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	Societal Test	New, Existing, Suspended
Bid-For-Efficiency		Baseline building	Bld projects	per customer	400,000	0	194.12	10	\$80,000	\$63,464	2	2.14	Pending

### Exhibit 2 - Section 12

Program Name	Measure Name	Baseline Description	EE Case Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Coincident Demand Saved	Effective Useful Life	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	Societal Test	New, Existing, Suspended
Retro-Commissioning		Baseline building	custom actions	per 100K sqft	200000	0	97.06	10	\$29,333	\$14,615	4	3.50	Pending

### Exhibit 2 - Section 13

Program Name	Measure Name	Baseline Description	EE Case Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Coincident Demand Saved	Effective Useful Life	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	Societal Test	New, Existing, Suspended
School Facilities	14 SEER Packaged and Split AC's <sup>12</sup>	SEER 13	SEER 14	Per Unit	489	0	0.18	15	\$440	\$65	5	0.99	Pending
School Facilities	24 SEER Packaged and Split HP's <sup>12</sup>	SEER 13	SEER 14	Per Unit	764	0	0.18	15	\$440	\$102	5	1.27	Pending
School Facilities	15 SEER Packaged and Split AC's <sup>12</sup>	SEER 13	SEER 15	Per Unit	913	0	0.34	15	\$880	\$122	5	0.93	Pending
School Facilities	15 SEER Packaged and Split HP's <sup>12</sup>	SEER 13	SEER 15	Per Unit	1,525	0	0.34	15	\$880	\$203	5	1.76	Pending
School Facilities	16 SEER Packaged and Split AC's <sup>12</sup>	SEER 13	SEER 16	Per Unit	1,283	0	0.47	15	\$1,321	\$171	5	0.88	Pending
School Facilities	16 SEER Packaged and Split HP's <sup>12</sup>	SEER 13	SEER 16	Per Unit	2,129	0	0.47	15	\$1,321	\$284	5	1.19	Pending
School Facilities	Advanced Power Strips - Timer Plug Strip	standard strips	Smart Strips - Timer	Per Sensor	213	0	0.02	12	\$19	\$23	45	3.07	Pending
School Facilities	Advanced Power Strips - Load Sensor	standard strips	Smart Strips - Load	Per Sensor	118	0	0.01	12	\$32	\$13	45	1.59	Pending
School Facilities	Advanced Power Strips - Occupancy Sensors	standard strips	Smart Strips - Occupancy	Per Sensor	170	0	0.02	12	\$75	\$18	45	1.10	Pending
School Facilities	Beverage Ctrls ("vending miser")	no controls	occupancy sensors	Per Sensor	1,610	0	0.20	12	\$199	\$172	50	2.74	Pending
School Facilities	Custom Measures	no action	custom actions	per customer	63,369	0	13.56	10	\$6,535	\$5,631	2	2.94	Pending
School Facilities	Daylighting controls	no controls	daylighting controls	Per kW	1,825	0	0.23	15	\$751	\$243	100	1.41	Pending
School Facilities	Delamping	T8s and T12s	Remove T8s and T12s	Per Fixture	151	0	0.02	15	\$6	\$20	750	4.38	Pending
School Facilities	Energy efficient exit signs	Incandescent/CFL sign	LED sign	Per Fixture	192	0	0.02	16	\$55	\$27	150	1.87	Pending
School Facilities	Hard Wire CFL <sup>14</sup>	73 W Incandescent bulb	16 W CFL	Per Bulb	188	0	0.02	4	\$16	\$6	750	1.50	Pending
School Facilities	HIDs to T8/T5 - Exterior	565W Metal Halide	263 W T5/T8s	Per Fixture	1,089	0	0.00	18	\$101	\$174	250	3.20	Pending
School Facilities	HIDs to T8/T5 - Interior	565W Metal Halide	263 W T5/T8s	Per Fixture	1,009	0	0.13	18	\$115	\$161	250	3.27	Pending
School Facilities	Induction Lighting	229 W Metal Halide	96 W Induction lamp	Per Lamp	451	0	0.06	18	\$147	\$72	25	1.85	Pending
School Facilities	Integral Screw in CFL <sup>14</sup>	79.3 W Incandescent bulb	19.1 W CFL	Per Bulb	199	0	0.03	4	\$11	\$8	150	1.95	Pending
School Facilities	LED Indoor Lights	56 W Incandescent bulb	7W CFL	Per Bulb	162	0	0.02	10	\$47	\$14	25	1.39	New
School Facilities	Occupancy sensors <sup>12</sup>	no sensors	occupancy sensors	Per sensor	462	0	0.06	12	\$103	\$49	75	1.91	Pending
School Facilities	Outdoor CFL	112 W Incand.	25 W CFL	Per Lamp	382	0	0.00	5	\$9	\$17	500	3.78	Pending
School Facilities	Premium T8 Lighting <sup>16</sup>	T12 Lamps	Premium T8 Lamps	Per Fixture	48	0	0.01	15	\$16	\$8	750	1.61	Pending
School Facilities	Programmable Thermostats	non-programmable	programmable	Per unit	5,688	0	0.00	11	\$204	\$556	250	3.36	Pending
School Facilities	Reach-in Cooler Controls ("vending miser")	no controls	occupancy sensors	Per Sensor	1,200	0	0.15	12	\$199	\$128	10	2.32	Pending
School Facilities	Reduced LPD	11.21 W/sqft	1.09 W/sqft	per building	10,431	0	1.32	12	\$3,464	\$1,112	1	1.43	Pending
School Facilities	Screw in cold cathode CFL	51 W Incandescent bulb	7W CFL	Per Bulb	194	0	0.00	6	\$12	\$10	100	2.54	Pending
School Facilities	Shade Screens	no screens	shading coeff: 0.24	Per Sq Ft	16	0	0.01	10	\$4	\$1	50	1.97	Pending
School Facilities	Snack Ctrls ("Vending Miser")	no controls	occupancy sensors	Per Sensor	322	0	0.04	12	\$103	\$34	50	1.49	Pending
School Facilities	Standard T8 Lighting <sup>16</sup>	T12 Lamps	Standard T8 Lamps	Per Lamp	26	0	0.00	15	\$17	\$3	750	1.00	Pending
School Facilities	T8 to T8	standard T8	premium T8	Per Lamp	154	0	0.00	15	\$21	\$0	0	5.08	Suspend
School Facilities	Variable Speed Drives	no VSD	VSD	per HP	2,312	0	0.31	15	\$377	\$308	250	2.61	Pending
School Facilities	Window Films	no film	shading coeff: 0.578		8	0	0.00	15	\$3	\$1	40	2.17	Pending

### Exhibit 2 - Section 14

Program Name	Measure Name	Baseline Description	EE Case Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Coincident Demand Saved	Effective Useful Life	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	Societal Test	New, Existing, Suspended
Home Energy Reports		no action	1.5 % savings	Per customer	225	0	0.04	1	\$0	\$9	40,000	1.53	Existing

## Exhibit 2

### Exhibit 2- Section 15

Program Name	Measure Name	Basecase Description	EE case Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Coincident Demand Saved	Effective Useful Life	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	Societal Test	New, Existing, Suspended
Behavioral Comprehensive	CFL Promotion (13W CFLs) <sup>18</sup>	no action	13W CFLs	Per Home	58		0	0.002	\$3	\$7	30,000	1.82	Pending
Behavioral Comprehensive	Community Education Kit <sup>18</sup>	no action	Faucet Aerator, LED Nightlight	Per Home	183		19	0.01	\$56	\$32	500	2.10	Pending
Behavioral Comprehensive	Direct Canvassing Kit <sup>18</sup>	no action	2 CFLs	Per Home	58		0	0.002	\$3	\$7	7,500	1.83	Pending
Behavioral Comprehensive	In Home Energy Display Pilot	no action	Home Energy Display 2.5%	Per Home	268		0	0.04	\$70	\$26	1,200	0.83	Suspend
Behavioral Comprehensive	K-12 Education Kit	no action	(2)13W CFL, (1)18W CFLs, Shower, Aerator, Nitelite	Per Home	220		19	0.01	\$20	\$38	6,700	3.46	Pending

### Exhibit 2- Section 16

Program Name	Measure Name	Basecase Description	EE case Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Coincident Demand Saved	Effective Useful Life	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	Societal Test	New, Existing, Suspended
ECSEP	Residential NC - Codes and Standards Support	No Support	With Support (100%)	Incremental	2,962,233		0	720.00	\$0	\$29,479	1	5.80	Pending
ECSEP	Motors - Codes and Standards Support	No Support	With Support (100%)	Incremental	1,442,676		0	108.00	\$0	\$14,357	1	5.69	Pending
ECSEP	General Service CFL's - Codes and Standards Support	No Support	With Support (100%)	Incremental	24,450,884		0	285.00	\$0	\$243,425	1	5.65	Pending
ECSEP	T-8's - Codes and Standards Support	No Support	With Support (100%)	Incremental	3,762,867		0	80.00	\$0	\$37,447	1	5.66	Pending

### Exhibit 2- Section 17

Program Name	Measure Name	Basecase Description	EE case Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Coincident Demand Saved	Effective Useful Life	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	Societal Test	New, Existing, Suspended
Conservation Voltage Reduction	DREX 34	No Regulation	With Regulation	Per kWh	634,687		0	0.00	\$0	\$0.18	1	4.30	New
Conservation Voltage Reduction	DREX 35	No Regulation	With Regulation	Per kWh	365,473		0	0.00	\$0	\$0.18	1	2.51	New
Conservation Voltage Reduction	DREX 36	No Regulation	With Regulation	Per kWh	665,899		0	0.00	\$0	\$0.18	1	4.55	New
Conservation Voltage Reduction	DREX 44	No Regulation	With Regulation	Per kWh	637,371		0	0.00	\$0	\$0.18	1	4.30	New

### Exhibit 2- Section 18

Program Name	Measure Name	Basecase Description	EE case Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Coincident Demand Saved	Effective Useful Life	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	Societal Test	New, Existing, Suspended
Residential Direct Load Control	Direct Load Control for Residential	no action	load control measures	Per customer	0		0	0.00	\$0	\$0	0	0.00	Suspend

### Exhibit 2- Section 19

Program Name	Measure Name	Basecase Description	EE case Description	Unit Description	Annual kWh Saved	Annual Gas Saved (Therms)	Coincident Demand Saved	Effective Useful Life	Incremental Cost/Unit	Non-Incent Program Cost/Unit	2014 Participation	Societal Test	New, Existing, Suspended
C&I Direct Load Control	Direct Load Control for Large Commercial <sup>19</sup>	no action	load control measures	per MW savings	20,453,112		0	20,000	\$0	\$77,972	20	NA	Existing

Footnote <sup>1</sup> New baseline to meet EISA standards; new incremental costs based on 2012 actuals

Footnote <sup>2</sup> Updated incremental cost and savings. Measure was not cost effective in 2012, however TEP is now requesting approval based on updated information.

Footnote <sup>3</sup> New baseline from single speed to two speed based on 2012 code update

Footnote <sup>4</sup> Updated incremental cost with new contract from IC

Footnote <sup>5</sup> Program re-design due to adoption of 2012 IECC. RMC now requires <= 65 HERS and update of incremental cost - No Tiers beginning 2014

Footnote <sup>6</sup> Split measure to show All Electric separate from Dual Fuel

Footnote <sup>7</sup> Suspended all measures not supported by testing for savings results

Footnote <sup>8</sup> Suspended ROB as the equipment section of this measures was no longer cost effective. New HVAC/QI will replace ROB option.

Footnote <sup>9</sup> Suspend On-site Audit and all related direct install measures

Footnote <sup>10</sup> Program re-design based on APS methodology

Footnote <sup>11</sup> Energy and demand savings provided by Governor's Office of Energy Policy

Footnote <sup>12</sup> Updated incremental cost from cost study completed as part of 2012 MER

Footnote <sup>13</sup> Updated base efficiency to NEMA; updated EE efficiency; formula to reflect base efficiency and EE efficiency and updated incremental costs to reflect 2012/2013 cost study

Footnote <sup>14</sup> Updated Measure Life based on Energy Star Bulb average hours and 2012 actual hours of operation for TEP and updated incremental cost based on 2012/2013 incremental cost study

Footnote <sup>15</sup> Updated Load Shape and Measure Avoided Costs (\$/kWh); changed application from RET to ROB which removes labor portion of incremental cost

Footnote <sup>16</sup> Updated incremental cost from Cost Study completed in 2012/2013 and savings estimate from EISA

Footnote <sup>17</sup> To be re-designed due to adoption of 2012 IECC

Footnote <sup>18</sup> Updated CFL Promotion to 13 Watt lamps due to EISA Standards

Footnote <sup>19</sup> Energy savings represents the 'credit' for 2014 allowed in the EE Rules

### Exhibit 3

EXHIBIT 3			
Commercial Measures	C&I	Small Business	Schools
Measure List	Decision No. and Date	Decision No. and Date	Decision No. and Date
14 SEER Packaged and Split AC's	No. 70403 (7/3/2008)	No. 70457 (8/6/2008)	Pending
14 SEER Packaged and Split HP's	No. 70403 (7/3/2008)	No. 70457 (8/6/2008)	Pending
15 SEER Packaged and Split AC's	No. 70403 (7/3/2008)	No. 70457 (8/6/2008)	Pending
15 SEER Packaged and Split HP's	No. 70403 (7/3/2008)	No. 70457 (8/6/2008)	Pending
16 SEER Packaged and Split AC's	No. 70403 (7/3/2008)	No. 70457 (8/6/2008)	Pending
16 SEER Packaged and Split HP's	No. 70403 (7/3/2008)	No. 70457 (8/6/2008)	Pending
17 SEER Packaged and Split AC's	No. 70403 (7/3/2008)	No. 70457 (8/6/2008)	Pending
17 SEER Packaged and Split HP's	No. 70403 (7/3/2008)	No. 70457 (8/6/2008)	Pending
18 SEER Packaged and Split AC's	No. 70403 (7/3/2008)	No. 70457 (8/6/2008)	Pending
18 SEER Packaged and Split HP's	No. 70403 (7/3/2008)	No. 70457 (8/6/2008)	Pending
Advanced Power Strips - Occupancy Sensors	Pending	Pending	Pending
Advanced Power Strips - Timer Plug Strip	Pending	Pending	Pending
Advanced Power Strips - Load Sensor	Pending	Pending	Pending
Air Cooled Chillers < 150 tons	No. 70403 (7/3/2008)		
Air Cooled Chillers > 150 tons	No. 70403 (7/3/2008)		
Anti sweat heater controls	No. 70403 (7/3/2008)	No. 70457 (8/6/2008)	
Beverage Ctrls ("vending miser")	No. 70403 (7/3/2008)	Pending	Pending
CO Sensors	Pending		
CO2 Sensors	Pending		
Coin Operated Washers (Proposed)	Pending		
Coin Operated Washers (Proposed)	Pending		
Cooling Tower Subcooling	Pending		
Custom Measures	No. 70403 (7/3/2008)		Pending
Daylighting controls	No. 70403 (7/3/2008)		Pending
Delamping	No. 70403 (7/3/2008)	No. 70457 (8/6/2008)	Pending
Economizers	Pending		
EER Rated Packaged AC (< 5 tons ,11.36 EER)	No. 70403 (7/3/2008)		Pending
EER Rated Packaged AC (> 20tons ,10.9 EER)	No. 70403 (7/3/2008)		
EER Rated Packaged AC (11.5 - 20 tons ,11.24 EER)	No. 70403 (7/3/2008)		
EER Rated Packaged AC (5.4 - 11.25 tons ,11.36 EER)	No. 70403 (7/3/2008)		
EER Rated Packaged HP (< 5 tons ,11.36 EER)	No. 70403 (7/3/2008)		Pending
EER Rated Packaged HP (> 20 tons ,11.11 EER)	No. 70403 (7/3/2008)		
EER Rated Packaged HP (11.25 - 20 tons ,11.02 EER)	No. 70403 (7/3/2008)		
EER Rated Packaged HP (5.4 - 11.25 tons ,11.31 EER)	No. 70403 (7/3/2008)		
Efficient Compressors	Pending		
Efficient Condensers	Pending		
EMS - Lighting Schedule	Pending		
Energy efficient exit signs	No. 70403 (7/3/2008)	No. 70457 (8/6/2008)	Pending
Energy efficient ODP motors	No. 70403 (7/3/2008)		
Energy Efficient TEFC Motors	No. 70403 (7/3/2008)		
Evaporative fan controls		No. 70457 (8/6/2008)	
Floating Head Pressure Controls	Pending		
Green Motor Rewind	Pending		
Heat Pump Water Heaters - Tier 1	Pending		
Heat Pump Water Heaters - Tier 2	Pending		
Hard Wire CFL	No. 70403 (7/3/2008)		Pending
HIDs to T8/T5 - Exterior	No. 70403 (7/3/2008)		Pending
HIDs to T8/T5 - Interior	No. 70403 (7/3/2008)		Pending
High Efficiency Evaporator Fan Motors (PSC)	No. 70403 (7/3/2008)	No. 70457 (8/6/2008)	Pending
High Efficiency Evaporator Fan Motors (ECM)	No. 70403 (7/3/2008)	No. 70457 (8/6/2008)	

### Exhibit 3

EXHIBIT 3			
Commercial Measures	C&I	Small Business	Schools
Measure List	Decision No. and Date	Decision No. and Date	Decision No. and Date
High Efficiency Ice Makers	No. 70403 (7/3/2008)		
High Efficiency Reach-in Refrigerators and Freezers	No. 70403 (7/3/2008)		
High Perf Glazing	Pending		
Induction Lighting	Pending	Pending	Pending
Integrated Case Control and Motor Retro-fit		No. 70457 (8/6/2008)	
Integral Screw In CFL	No. 70403 (7/3/2008)	No. 70457 (8/6/2008)	
LED Channel Signs	Pending	Pending	
LED Indoor Lights	Pending		
LED Pedestrian Signals	Pending		
LED Street and Parking Lights	Pending		
LED Traffic Lights	Pending		
Refrigeration LED Strip Lighting	New	New	New
Canopy LED Lighting	New	New	New
Computer Power Monitoring System	New	New	New
Night Covers	No. 70403 (7/3/2008)		
Occupancy sensors	No. 70403 (7/3/2008)	No. 70457 (8/6/2008)	Pending
Outdoor CFL	No. 70403 (7/3/2008)	Pending	Pending
Premium T8 Lighting	Pending	Pending	Pending
Programmable Thermostats	No. 70403 (7/3/2008)	No. 70457 (8/6/2008)	Pending
PTAC	Pending		
PTHP	Pending		
Refrigerated Display Automatic Door Closers	Pending	Pending	
Refrigerated Display Gaskets	Pending	Pending	
Reach-in Cooler Controls ("vending miser")	No. 70403 (7/3/2008)		
Reduced LPD		Pending	Pending
Screw in cold cathode CFL	No. 70403 (7/3/2008)		Pending
Shade Screens	Pending	Pending	Pending
Snack Controls ("vending miser")	No. 70403 (7/3/2008)	Pending	Pending
Standard T8 Lighting	No. 70403 (7/3/2008)	No. 70457 (8/6/2008)	Pending
Strip Curtains	No. 70403 (7/3/2008)		Pending
T8 to T8	Pending	Pending	Pending
Variable Speed Drives	No. 70403 (7/3/2008)		Pending
Variable Speed Screw Compressor	No. 70403 (7/3/2008)		
Water Cooled Chillers - Centrifugal < 150 tons	No. 70403 (7/3/2008)		
Water Cooled Chillers - Centrifugal > 300 tons	No. 70403 (7/3/2008)		
Water Cooled Chillers - Centrifugal 150 - 299 tons	No. 70403 (7/3/2008)		
Water Cooled Chillers - Reciprocating All Sizes	No. 70403 (7/3/2008)		
Water Cooled Chillers - Screw < 150 tons	No. 70403 (7/3/2008)		
Water Cooled Chillers - Screw > 300 tons	No. 70403 (7/3/2008)		
Water Cooled Chillers - Screw 150 - 299 tons	No. 70403 (7/3/2008)		
Window Films	Pending	Pending	Pending